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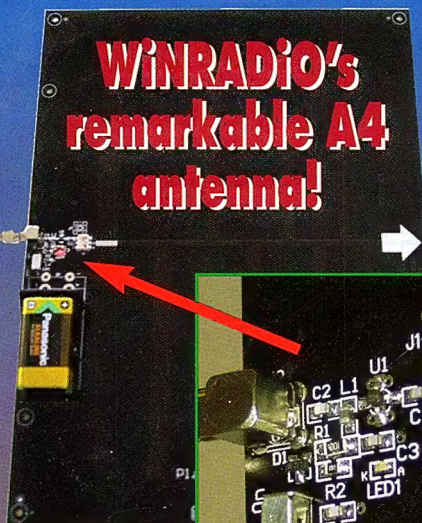


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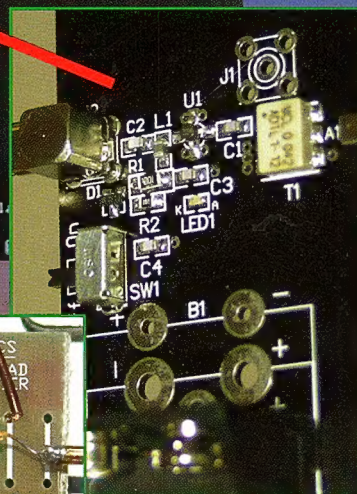
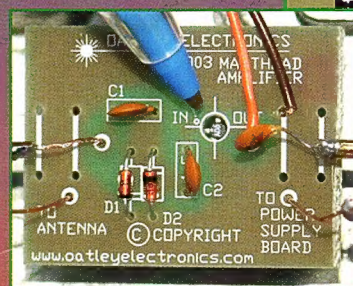


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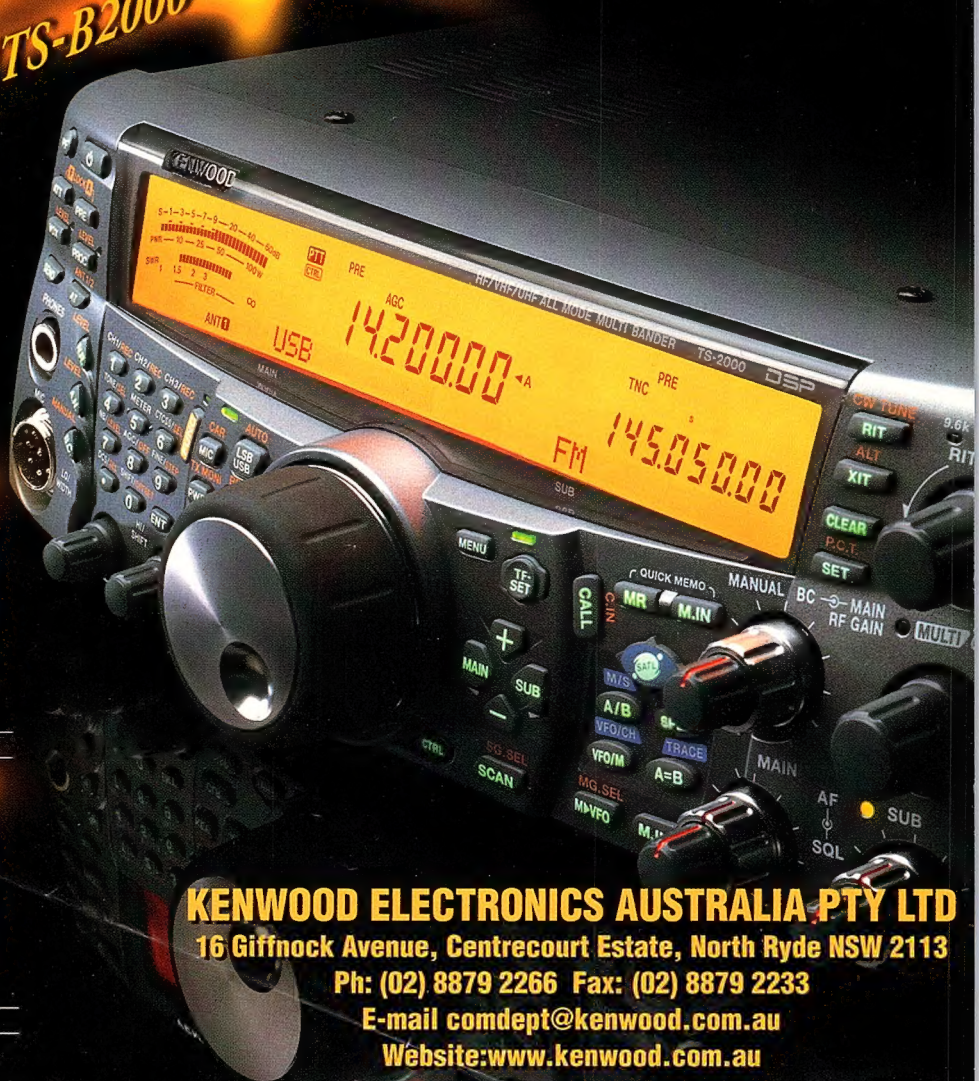
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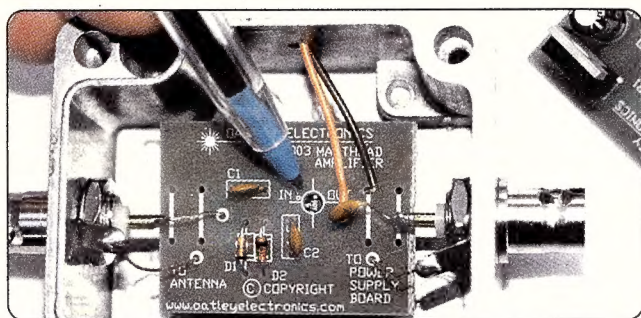
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Spock, help Captain Kirk alight from his transporter! Either that, or this is a competitor in the London to Sydney Air Race who wound up spending a night with a VKS-737 member in the bush. You decide...

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Steve Ireland discovered long ago that old designs often have lots to offer. This time, he visits the Windom. Check his verdict!

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# Editorial

## Comments

By Chris Edmondson VK3CE

G'Day, and welcome to the first combined issue of **Radiomag incorporating Radio and Communications!** That's a bit long, so let's call it **Radiomag + R&C**.

It would be fair to say there are a lot of surprised readers out there. The change of ownership of R&C seems to have snuck up on everyone out of the blue. The purchase announcement was made a couple of weeks ago, but was a long time in the making.

We sincerely hope that the revised format suits you all, and are eager to present the magazine in a form and format you appreciate. It will continue to evolve in response to your feedback and story ideas. It will remain apolitical but will continue to represent you.

Effective immediately, the on-sale date will revert to the **last Wednesday of each month**, with the same on-sale date right around the country, no matter where you are. Now that will make the rush to read the Classifieds even hotter than ever before!

So where will the newly-combined title go from here? The basic formula remains unaltered. It is radio of *all* types, plus general electronics, with a heavy emphasis on news, building projects and understanding the way of things. And when we talk about 'all sorts of radio', we really mean it. Reviews of new and favourite old equipment alike, antennas to make or buy, projects to assemble, visits to far-off places, technology updates and education, plus the great regular columns you've read for many years.

So we'll spend lots of time exploring shortwave, scanning, CB, and, of course, amateur radio. We'll tramp the 4WD bush trails with the VKS-737 outfit, check out the occasional marine and aviation transceivers, watch the developments in GPS gear, and provide lists of who and what to find, and where and when to find them.

We can't promise to have everything and everyone in every issue, but we'll be very strongly guided by what you want (hey, you have to ask for it though!), and we will grow together into the future... Please feel very free to tell us what you think and want, whether by letter, fax or E-mail, or by a telephone call to the Editor.

Our contact details are on the left of this page.

**Amateur licences into the future...**

It all depends on who you ask. Some would say the amateur service is alive and well, and a growing business. Others growl that amateurs are dinosaurs, a dying breed of oldies who, to put it kindly, are way out of touch. So who's right?

Look, at the risk of offending some, does it really *matter*? Whether the amateur service is growing or contracting, isn't it true that it should move with the times, and that its structure should reflect changing community attitudes and awareness?

Some amateur radio operators could indeed be called old-time radio dinosaurs. They like their hobby as they see and use it. Others, generally younger, view their hobby in a different way, and their approach to it is fundamentally different. But all *true* transmit hobbyists, whether amateur HF Morse users or VHF FM addicts, legal 11m or UHF CB users, or CB 'freebanders', would probably agree that the best protection into the future for any radio hobby is for it to evolve and be seen as fit and appropriate for the time.

Perhaps the reason we should look so closely at the amateur service is that it is alone in offering freedom to roam the bands virtually at will, talking to other enthusiasts from around the world. But is it fair that it can be almost impossibly difficult for some people to enter? While we know that it's a *fait accompli* that the Morse Code requirement will soon cease to be a hurdle for some, there are many who have tried and given up on the theory requirements as well. So ask yourself this: in an era when most 'hams' use commercially-manufactured equipment, is it really as necessary as it once was for them to demonstrate a thorough technical understanding?

I've been thinking about things like this for a long time, and think I have an answer. Some of you will like it, while others will say I need my head read.

I propose a new, **totally non-technical** entry level to amateur radio. Any authorised radio club could conduct an "Amateur Radio Information Day", with two three-hour sessions discussing in very general terms what hobby radio is. At the conclusion of the course, a very simple "What is Amateur Radio?" session check would be conducted, along with the current Regulations exam required of *all* amateurs (and is it time this was revised as well?). A pass in the two assessments would result in the issue of an amateur call sign *on the spot*, with the call obtained from the ACA via the internet.

What I'm saying here is that the session check would not be a theory paper in any sense of the word. No theory at all. Just a general understanding of what amateur radio is, what you can do with it, and perhaps even where it might lead you in career terms.

more on Page 9... 



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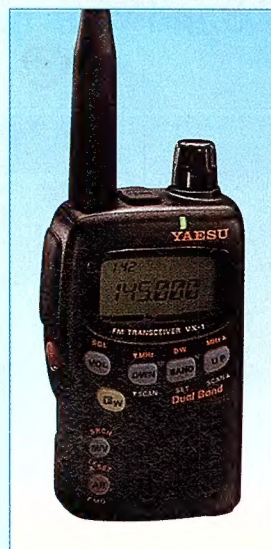
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- Includes MH-48B6J DTMF microphone for direct keypad frequency entry, plus convenient menus with 35 'set and forget' functions.
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- Additional features: Supply voltage display, transmit time-out timer, auto power off, and S-meter RF squelch.

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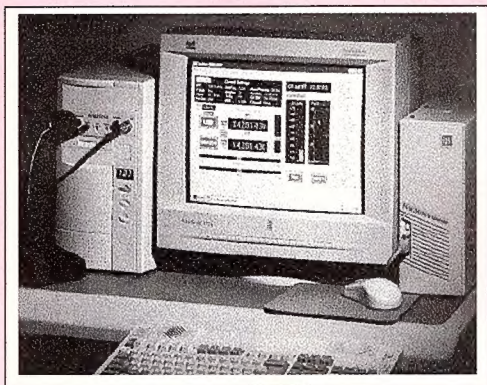
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Send your news to **John Kolm, VK3YJK**. E-mail **newsdesk@radiomag.com**



## Kachina HF rig gets the chop...

It's always sad when a company decides to discontinue a good product, but it's doubly so when the product was both good and, when launched, unique.

Way back in August 1998 we presented a review of the ground-breaking new Kachina 505DSP HF transceiver, a radio which used a personal computer to provide the "smarts".

Its reviewer, Phil Harman, VK6APH, was simply ecstatic about the new radio.

The only problem was that it was horrendously expensive by the time it arrived in this country.

In his review, Phil said "...The Kachina 505DSP is a seriously good radio, with its RF performance being as good as that of more conventional designs." He went on to describe it as a "first class" piece of radio gear.

## Victoria Police get new Dauphin helicopter

Here's just the ticket for a quick commute to the office! Either that, or it will give you the ticket and let you walk to the office!

The Victoria Police have been using French-made Dauphin helos for some years, as just about any Melbourne resident could attest. These jet-powered craft have an absolutely unmistakable sound.

A reader was kind enough to send *Newsdesk* a photo of a brand new Dauphin being readied for active service with VicPol — and followed it with another photo, at right, suggesting the best way to operate the thing in service. What is this thing anyway? Blue Thunder?!!

We'll leave the rest to your imagination...





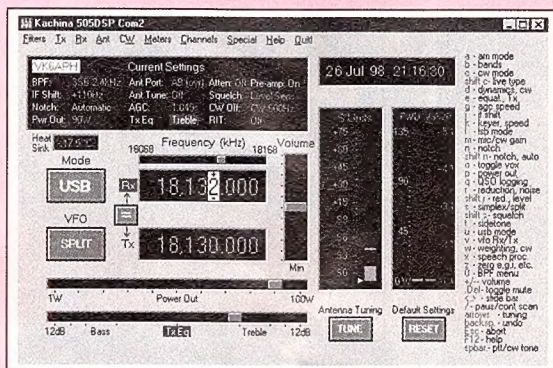
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or write to News Desk, PO Box 270, East Melbourne, Victoria 3002

But in May this year, Kachina executives announced that their line of HF gear would be discontinued.

In a brief statement released to the Kachina E-mail reflector, spokesman Cameron Earnshaw announced that the 505DSP and all accessories were to be taken out of production immediately.

They say one person's bad news is often another person's good news — and in this case, that person could well be you!



The announcement added that remaining inventories would be

sold out on the Kachina web site at <http://www.kachina-az.com/>

The radio was around US\$2400 prior to the announcement. While the runout stocks last, however, the price is US\$1095 — a smidgin over A\$2000 at press time.

It seems to be a red-hot bargain! There's also a full range of optional modules and so on, and downloadable operating software. *Newsdesk* reckons it's well worth a close look!

## Editorial

## Comments

From  
Page  
Five

So what sort of call sign would you end up with? A Novice Limited? Well, no, that would hardly be fair, would it? And what sort of privileges would be offered to these people? The way I see it, such a qualification should be at the very least equal to 11m CB, but with an open slather for overseas communications. It would also need access to, say, the FM portion of the two metre and/or 70cm band, with access to the excellent networks of repeaters offered there. And 80m coverage would be a good idea as well. You'd want 100 watts to play with, too, although maybe it should be limited to the old Novice 30 watt level.

In other words, there's little point suggesting yet another grade of licence without making it something of value. Look back to the introduction of the Novice Limited licence. Everyone said what a wonderful thing it was — but have the bands been flooded with excited new Novice Limiteds? Er, no. Could it be that many of the people who should have been attracted to this new level looked at what they'd get for their work and decided they'd be better off on CB?

Is it time now to have a fresh look at the Novice Limited? Should 10m FM be offered there as well? Can we think of ways to make this current entry-level qualification more enticing?

I'm sick to death of hearing the tired old cries of needing difficult theory exams to keep the riff raff out. Such arguments are not only stale, they're offensive in the extreme. Who am I to say I'm superior to another person because I managed to answer enough of the theory questions the right way back in the late 1960s or whenever it was?

I know some people whose technical understanding of how their radios work is at least the equal of mine, if not better. But they simply can not pass the exams. They just "freeze" when the crunch comes. The mind goes to jelly to the point they'd

be hard pressed to work out what their name is for the cover page, far less tackle anything inside the exam paper!

How many times do you expect people like this to try before they give up altogether and retreat to 40 fixed channels? And before you mutter that perhaps we don't need them, it's about time you realised that we *do* need them!

Amateur radio isn't for everybody. It never has been and never will be. But there are enormous numbers of people in our part of the world who would jump at the chance to join amateurs and use the bands, thereby protecting the allocations into the future, if only there were an easier way aboard.

It's worth considering what other countries do for their entry level amateur licenses, and in cases like this what we're really proposing is hardly more difficult than getting on air using a CB! There's only one country which offers such a basic entry standard, and that country is Japan. Perhaps its administration was motivated by a sense of helping its electronics manufacturers, but perhaps it was also motivated to help the youth of the country see the value in an electronics future. Whichever the case, Japan offers a unique licence which requires little more than what I propose above.

Its introduction changed forever the face of amateur radio in Japan. The so-called "telephone" licence resulted in an explosion of numbers of Japanese amateurs. Mums started toting HTs in their handbags, and in some schools, children holding licences actually outnumbered those without.

Japan encourages its youth to see the possibilities of working in the smart technologies. While Australia doesn't exactly discourage these pursuits, entry to such areas is met by stumbling blocks seemingly every step of the way.

Maybe it's time we started thinking along the same lines.

So what do you think? The Feedback pages are open and looking for your reactions!

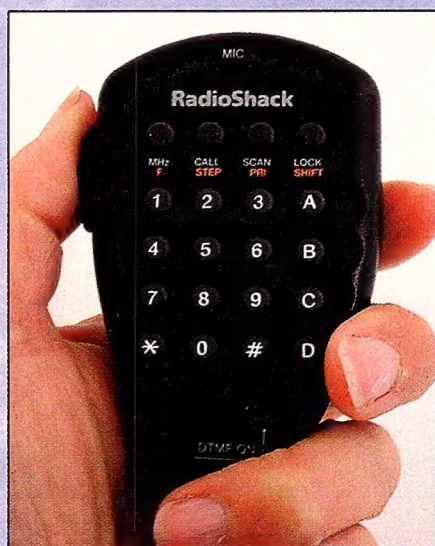
See you again on Wednesday, October 3rd! Cheers until then from Chris Edmondson and the team.

*Chris*



# SYNCR O

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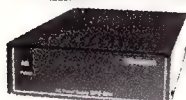
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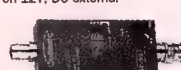
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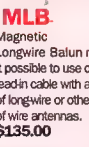


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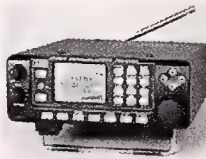
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# A Blaster from the Past — the Windom antenna

By Steve Ireland, VK6VZ

A few weeks ago I was in the UK at the home of a friend of mine, John Vaughn G3DQY, with whom I have kept weekly schedules on the HF bands for almost a decade. We were sitting drinking tea with my father in John's first floor flat in St. Leonard's, when I asked that question that is common to every radio amateur who visits a fellow enthusiast — "So, are you going to show us the antenna?"

For the last year or so, John has been using what he refers to as a 'long wire'. However, looking out of the window, I realised the alleged long wire was in fact a Windom antenna.

It appeared that the reason that John referred to his antenna in this manner, rather than by its true name, was because many of today's radio amateurs wouldn't know what a Windom was. If this is the case, this article should put the situation right in Australia at least — and introduce you blokes to a very useful antenna with multi-band capabilities.

The Windom is a true amateur radio antenna and is named after its inventor L Windom W8GZ, who described its design in the September 1929 issue of the ARRL's QST magazine. Unfortunately, the ARRL itself seems to have forgotten all about it, as my copy of *The ARRL Antenna Book* (15th edition, published in 1988) does not appear to include any details of the Windom.

The original Windom was essentially a single band half-wave antenna, tapped off-centre somewhere along its length with a single wire 'feeder' (see Figure 1). The Windom worked on the principle that when an antenna is resonant the impedance from one end to another will be purely resistive, varying from around 50 ohms (at a current maxima) to about 5000 ohms (at a current minima). A feeder — which can take the form of a single wire — can be therefore be attached anywhere along its length and if this 'tapping point' (T) is at the same impedance point as the characteristic impedance of the feeder, the feeder is matched to the antenna and therefore will not radiate or have any standing waves on it.

Back in 1929, SWR bridges were basically non-existent, so Mr Windom adjust-

ed the point that the single wire feeder was tapped onto his antenna by running a neon globe along the feeder to see if there were pronounced standing waves (ie voltage peaks which would light the neon). When Mr Windom reached a tapping point when there were apparently no large voltage peaks on the feeder, he knew his feeder was matched to the antenna.

The next step in the development of the Windom was taken by a UK radio amateur G2BI (name unknown) in the 1930s!. G2BI cut the length of a Windom antenna so that it was resonant on one band (say, 14MHz) and cut the length of the single wire feeder so that the combination of the two was resonant on the next band down (ie 7MHz), making it an effective two-band antenna.

## Singapore Sling

At this point, Jim MacIntosh, VS1AA (also licensed as GM3IAA), started doing a lot of experiments with Windom antennas in Singapore. Jim MacIntosh realised there must be an arithmetical relationship between the tapping point of the feeder and the impedance of the antenna at that point, which could make reproducing a Windom easier — with the possibility of multi-banding it.

VS1AA found that if a Windom was tapped one-third along its length — or one-sixth from the centre of the antenna — it had a theoretical impedance in the order of 300-500 ohms. Now, if a half-wave Windom antenna (for, say, 3.5MHz) was used on an even harmonic of its resonant frequency (ie 7, 14 and 28MHz), it would display a similar impedance on each of these frequencies.

Using a 41m wire tapped one-third along its length by a thinner single wire feeder, Jim MacIntosh produced a four-band antenna design that was an excellent performer on 3.5, 7, 14 and 28MHz. This antenna, originally described in the RSGB's journal back in September 1936 and shown in Figure 2, was very popular with radio amateurs around the world for over three decades.

By the mid 1960s the Windom antenna or 'VS1AA' as it had become widely known, had fallen out fashion, replaced largely as the multi-band antenna of choice by the 'G5RV' antenna of Louis Varney, G5RV. The G5RV multi-band dipole offered the possibility of coaxial cable feed, plus performance on the 21MHz amateur band — features not available with the VS1AA design.

However, during the 1970s, the Windom underwent something of a revival, with several radio amateurs producing designs using twin wire feeder. Some had 6:1 or 4:1 matching transformers at the antenna's 'one-third' feed-point, allowing 75 or 50 ohm coaxial cable to be used as a feeder, while others used open wire or 300 ohm slotted ribbon feeder via an ATU instead.

If you were interested in the 3.5 MHz band, the twin-wire or balun-fed 41m long Windom offered something of an advantage over the G5RV antenna, as the former was a full-size half-wave on this band, while the some of the main radiating part of the latter on 3.5MHz was effectively folded-up and did not contribute to its performance.

At the time of the revival of interest in the Windom, I was a fairly newly-licensed

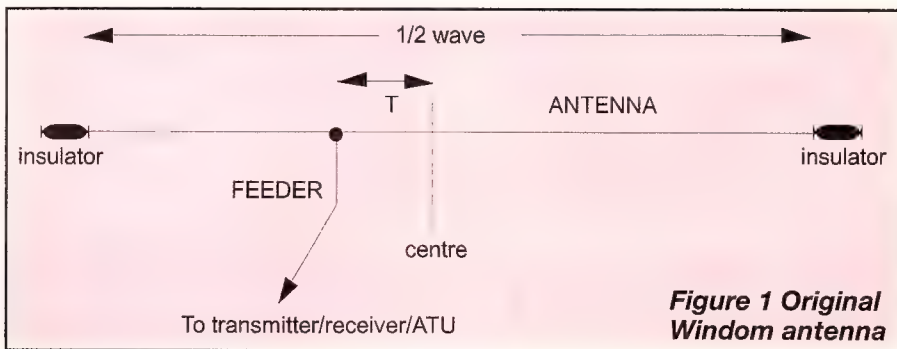
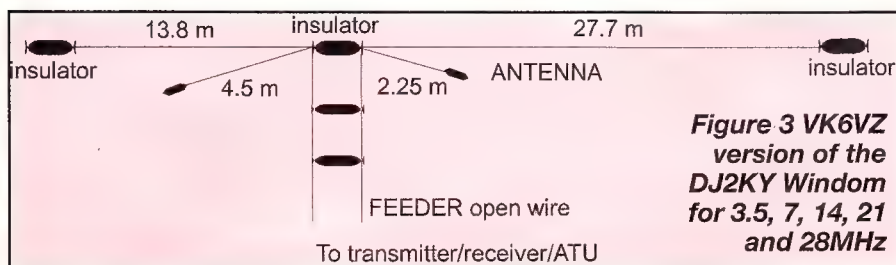
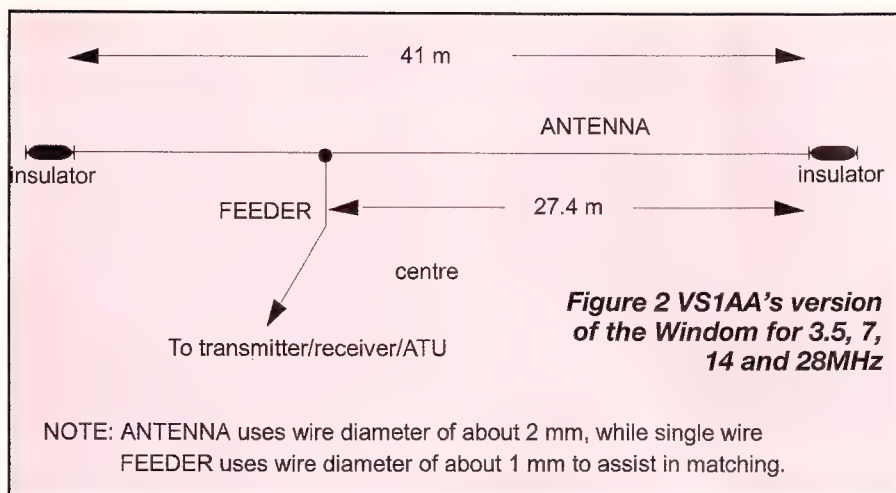


Figure 1 Original Windom antenna





G3ZZD and very keen on 3.5MHz SSB DXing, but with an interest in the other HF bands. After trying a G5RV and being rather disappointed with its performance on 3.5MHz in comparison to my previous full-size coax-fed dipole, I switched to a five-band Windom design by DJ2KY<sup>2</sup>, fed with open wire via a Z-match ATU.

The DJ2KY Windom — see Figure 3 — was better than the G5RV on 3.5MHz, with a performance that seemed virtually identical to the full-sized dipole, but worked as well as the G5RV antenna on 7, 14, 21 and 28MHz. As a result, I used the DJ2KY Windom as my main antenna for around a year, until my interest moved back to 7MHz and CW.

The DJ2KY Windom works on 3.5, 7, 14 and 28MHz in the same manner as the VS1AA version — it is a half-wavelength long on the lowest band and works on the

other three higher bands by virtue of their even harmonic relationship to 3.5MHz. On 21MHz, a separate half-wave long radiator is used, which is suspended under the main radiator with a gap of at least 30cm between the two radiators. Both radiators are fed at a point which is located one-third of the way along their total length.

In my case, I fed the DJ2KY antenna with open wire via a Z-match-type aerial tuning unit, rather using a 6:1 matching transformer and coaxial cable feed.

### The New Breed

In the last decade or so, new forms of Windom have appeared, mainly on the commercial market, such as *Radio Works'* well-known Carolina Windom and Fritz's FD4 antenna. Some of these antennas, such as the Carolina Windom,

use a feed-point tap which is slightly closer to the centre of the antenna than the original VS1AA.

Instead of a feed-point one-third (0.33) along the antenna, some of these designs use a feed-point located about 0.38 of the total antenna length. Changing the feed-point so that it is closer to the centre of the antenna in this way apparently causes the impedance to drop from 300 ohms (at the 0.33 tap) to around 100 ohms (at the 0.38 tap).

The idea behind feeding the antenna at this point is that instead of using a 4:1 or 6:1 matching transformer if 50 ohm coaxial feed is desired, a 2:1 version can be used instead, to provide a suitable match.

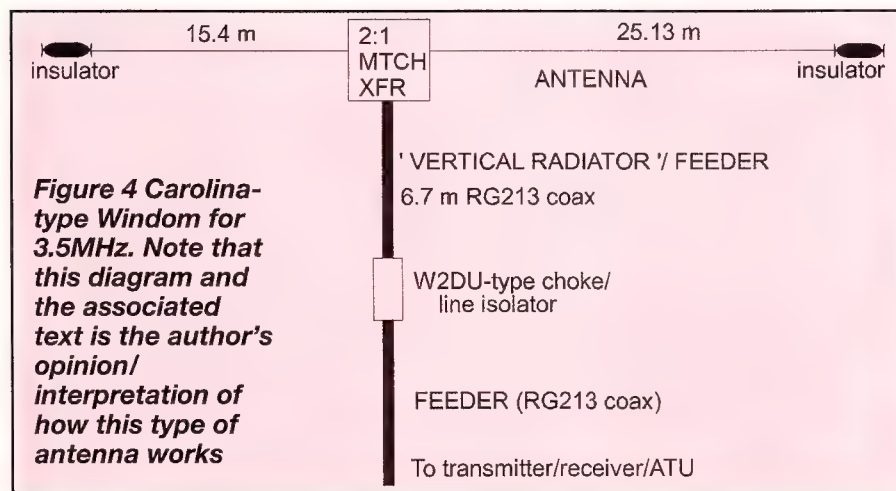
The famous Carolina Windom apparently uses this idea, but is also aimed at turning what is one of the disadvantages of the original Windom into an advantage. All conventional types of Windom antenna are fed off-centre — that is to say towards one end of the antenna. What this means in practical terms is that its feeder will radiate to a relatively greater extent than that of a conventional dipole-type antenna that is centre fed.

The end result is that the feeder of a Windom can potentially radiate all the way down the shack and into the house wiring, making it potentially a greater source of interference to radios, televisions and telephones, etc.

What the Carolina Windom does is to form a small vertical radiator out of the top part of the antenna feeder which is well away from the shack/house — see the 3.5MHz Carolina Windom in Figure 4 — and place a device called a line isolator (a sort of RF choke) at this point. The line isolator/choke is aimed at stopping the feeder radiation from part of the feeder below it, allowing the feeder above it to act as a vertically polarised (and low angle) radiator.

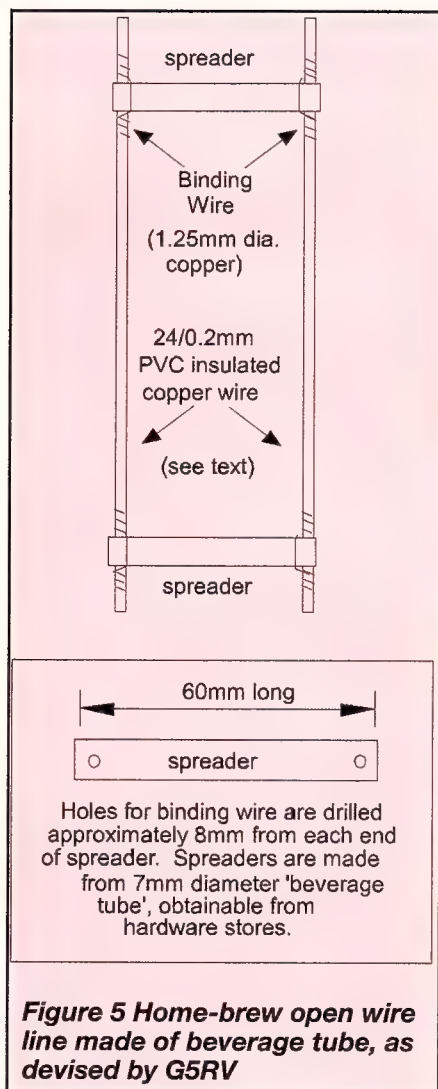
This type of Windom antenna is very popular with DXpeditions and has a good reputation, but I have never actually used one myself — nor any type of coaxial/matching transformer-fed Windom.

I do not favour any type of multi-band antenna using a ferrite-cored matching transformer (balun, unun or whatever) at its feed-point, whether it be a centre-fed dipole or a Windom. This is because a multi-band antenna that covers 3.5 or 7MHz is going to be very low to the ground on its fundamental frequency (after all, 10-15 metres in height is less than a quarter of a wavelength on 3.5MHz) causing a variation to its length. However on the higher bands, the antenna's effective height is much greater and the ground has little





# The Windom antenna



effect — making an antenna that is resonant on 3.5MHz distinctly off-resonance on its harmonic frequencies of 14 and 28MHz.

Now, to my mind, an off-resonance antenna with ferrite-cored matching transformers means a reactive feed-point impedance, meaning heating of the ferrite, mismatching and consequent losses. Open wire feeder (and a suitable ATU) may be uglier than coaxial cable, but it is hard to beat for a multi-band HF antenna as far as performance (and lack of RF losses) is concerned.

## Making a Windom of your own

Most people who have used Windom antennas have chosen them because of their multi-band abilities — including myself. The fact of the matter is that it is not likely to work any better than a full-sized dipole on its fundamental frequency (ie where it is half a wavelength long).

However, if you are planning to use a dipole that is a half-wavelength on the lowest frequency band of your choice as a multi-band antenna, fed with open wire, the Windom does have one advantage — it can be easier to match with the Transmatch type of aerial tuning unit (ATU), widely used today and sold by such manufacturers as MFJ and Ameritron.

One of the problems of using a centrefed half-wave antenna on its even harmonic frequencies (ie using a wire 41.5 m long on 7, 14 and 28MHz), particularly if the open wire (see Figure 5) or ribbon feeder is around a half-wave long or even multiples of one, is that it will present a very high impedance to an ATU. On the other hand, a Windom fed with this same length of feeder on these bands will present a nice medium impedance, which is matched much more easily by a Transmatch than is a high impedance.

Still, on the other hand again, the Windom's feeder is more likely to radiate RF than that of the dipole...

A DJ2KY Windom antenna, fed one-third of the way along its length with 66ft of open wire feeder (or a slightly shorter length of 450 ohm ladder line) connected to a Transmatch-type ATU should make an excellent antenna for 3.5, 7, 14, 21 and 28MHz and perform at least as well as the popular types of single-wire multi-band antennas. If you place a W2DU choke (sometimes called a choke balun — see Figure 6) between your ATU and transceiver (or linear amplifier), this should help to some extent with any potential interference problems.

If you use a G5RV dipole or similar via an ATU, why not try a Windom of this kind? You might just be pleasantly surprised!

Note that the radiation pattern of the Windom will differ somewhat on even harmonic frequencies than a centre-fed dipole of the same length. On its second harmonic, the Windom will have a pattern with slightly wider lobes than a dipole used on the same harmonic, tending to resemble the shape of a four-leaf clover. On its fourth, sixth and eighth harmonic, the multi-lobed pattern of the Windom tends to be concentrated in the direction that the longest part of the antenna runs in, giving the antenna some quite useful (but limited) directional possibilities.

Effectively, an 41.5 m long Windom for 3.5, 7, 14 and 28MHz will be omnidirectional, but will radiate slightly better in the direction of its longest part on the higher frequency bands.

## Conclusions

The Windom antenna can work as well as full-sized dipole on its fundamental frequency, where it is a half-wave antenna, and offers a very competitive performance on its even harmonic frequencies. A 41.5 m element, with the addition of a second half-wave element cut for 21MHz suspended below it (as designed by DJ2KY) and fed with open wire via a Transmatch or Z-match ATU, will provide an excellent multi-band antenna covering 3.5, 7, 14, 21 and 28MHz.

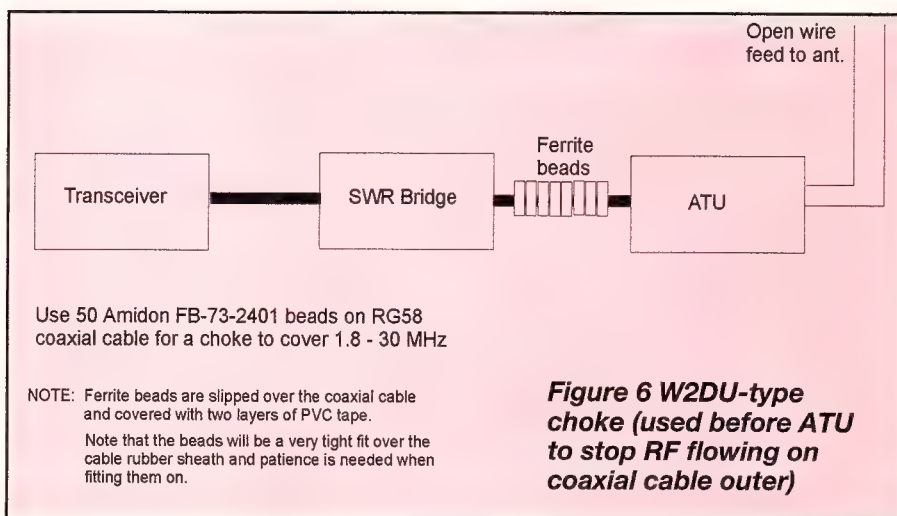
Try out a piece of radio history and put up a Windom yourself — truly a blast from the past!

© Steve Ireland, VK6VZ, June 2001

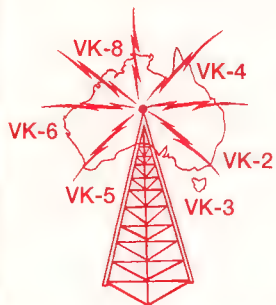
## References

<sup>1,2</sup> p268, *Amateur Radio Techniques* by Pat Hawker, G3VA, 5th edition, published by the RSGB.

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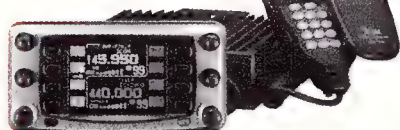
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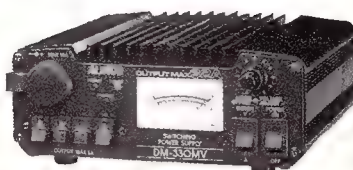
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# WiNRADiO AX-31B

## active indoor antenna

By Ian Sachs

I must admit to some degree of fascination with WiNRADiO products. Ever since I got my first 'brick' WR-1550e unit, my life became more fun, and also somewhat simpler and more convenient — I now scan for frequencies while typing away on my PC, and don't even have to raise my fingers from the keyboard to be able to tune my scanner radio! Which reminds me, that *"Men first feel necessity, then look for utility, next attend to comfort, still later amuse themselves with pleasure, thence grow dissolute in luxury, and finally go mad and waste their substance"*, as someone once said, so I guess I must be at the third stage, heading for the fourth!

Being an inner city dweller, I have been always envious about those who think it nothing special to put a discone antenna up on the roof, or even build their own antenna tower in the back yard. For years, I had to make do with pieces of wire, ingeniously hidden behind my curtains and experimentally run around the room. Rolls of wire are often hiding behind (or on top of) furniture, waiting to be put back "in place" as soon as the guests leave.

After years of misery, enter the AX-31B, advertised as a professional log-periodic indoor antenna "ideally suited for EMC pre-testing, surveillance and monitoring" on the WiNRADiO Web page <http://www.winradio.com/home/ax31b.htm>. I expected a hefty price tag, but at A\$225 I found it affordable even for my hobby purposes, so I pulled my credit card out. After all, I figured, this antenna can be used with other equipment as well (not only the WiNRADiO brand), and will also go with my ancient AOR-3000. (Later experimentation has shown it is also great with TV, but wait for it...)

The antenna comes in a beautiful glossy box. (Someone should tell the WiNRADiO people they are wasting their efforts on me; I won't be so easily bought with pretty packaging!) The antenna is packaged in an antistatic bag, together with about 6 feet of cable with connectors and an instruction sheet. The connecting RG-58/U cable has an SMA connector for the antenna, and a BNC connector which plugs into the receiver.

The antenna itself surpasses the box in its beauty. It is made of black fiberglass with the etched log-periodic dipole array elements clearly visible on both sides of the board. The surface-mount amplifier and impedance matching circuitry is placed directly on the antenna, together with the battery holder. There is also a miniature slide switch to turn the power on, and a tiny surface mount LED which glows bright red when the power is on.

The unit is powered by a standard 9V "transistor" battery (PP3 type). The current drain is 25mA, so it will last quite a few hours. After I took these photos, given my continuous use of the antenna, I connected it to an external DC power supply by soldering two wires to the battery terminals. The instruction

sheet also shows how the unit can be simply powered remotely through the coaxial cable, but I did not find this necessary.

The board is lightweight, so for my experimentation I attached it to a wall using a piece of double-sided tape.

The manufacturer specifies the frequency range 230 to 1400 MHz, but my first attempt to see if my new setup is working was to tune to a local FM station (101.9 MHz). This worked beautifully. Turning the switch on and off made a big difference. The antenna must be always operated with power on, as the amplifier is a necessary part of the circuit, probably due to some impedance matching requirement. A glance at the surface-mount circuitry reveals that the amplifier chip is connected to the dipole structure through an impedance-matching transformer.

As I started to experiment with VHF and UHF frequencies, my interest grew. Most stations which were noisy before (on my original pieces of wire), came out

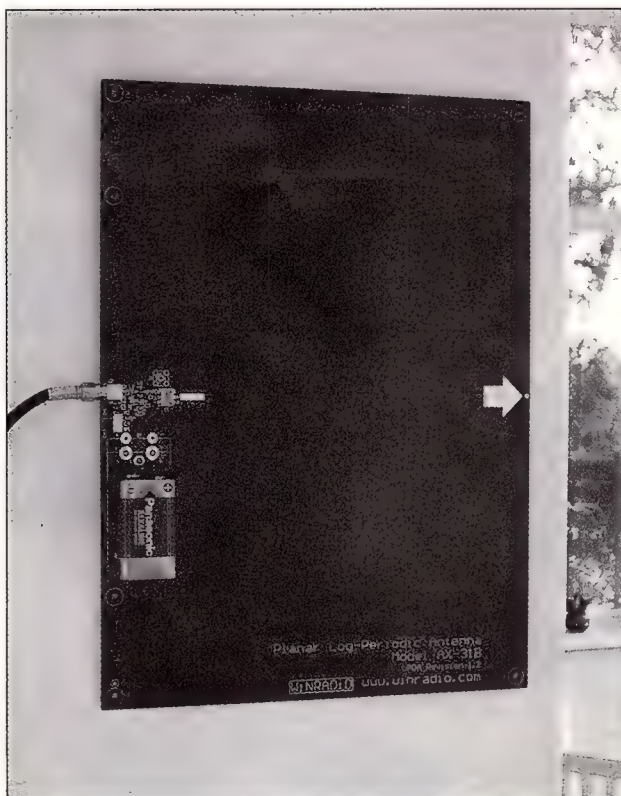
loud and clear on the AX-31B. The local police in the 460-470 MHz band, and trunking stations around 860 MHz sounded like they were around the corner.

But how about directivity? WiNRADiO claims that this is a directional antenna, with directivity 6dBi (which, in my very rough interpretation, should mean that, in the active direction, the gain of this antenna should be almost 6dB greater than the omnidirectional piece of wire I had been using so far).

Rotating the antenna, I could indeed observe peaks and valleys in the received signal strength. This gives one the advantage in being able to reduce interference by pointing at the signal source, away from the interfering signals.

On the other hand, with scanner use, there is the possible problem that if some stations in the band of interest are in different directions, or are moving, then the antenna direction needs to be constantly adjusted. This has not been such a big problem in my case.

The directionality is also more apparent at higher frequencies. I have even tried this antenna on shortwave also (although I am aware that the lowest frequency is specified as 240 MHz), and was pleasantly surprised.



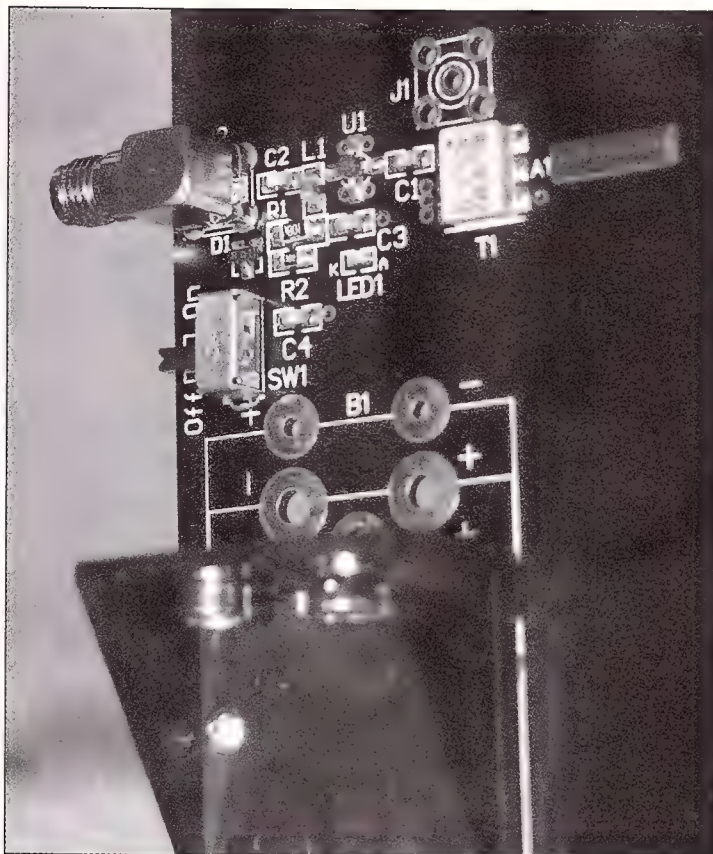


The antenna performs similarly to the wire antenna supplied with my Sangean receiver, but without the inconvenience of having to run the long wire around the room.

At these low frequencies there is no directivity and the antenna appears to work as an amplified short whip (the log-periodic structure are tuned much higher than shortwave frequencies, so it acts as an untuned short whip for shortwave).

One common problem with most active antennas is their susceptibility to overload and intermodulation. I was pleased to see that this is not an issue with AX-31B.

The third-order intercept point is specified at respectable 25dBm, which is much higher than any wide-band scanner likely to be connected to it. The gain of the amplifier is specified at 20dB, and the noise figure is a reasonable 3.8dB.



In summary, the AX-31B is probably no substitute for a good external antenna, but in my circumstances it significantly improved reception. While I was experimenting with tuning to various frequencies and connecting it to various radio equipment I have at home, I also thought it might be an interesting idea to try it with my TV.

And that's when the real surprise came: The result was absolutely stunning: I got better picture than with the TV antenna cable connected to the CATV socket in my apartment!

The WiNRADiO people are probably quite unaware that they are sitting on a gold mine: this unit doubles up as the finest indoor TV antenna I have ever seen!

I purchased my unit directly from WiNRADiO in Melbourne, (03) 9568 2568, for A\$225. It can be also bought on-line from <http://www.winradio.com>. **R**

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# Let's get organised!

## Computer programs for the dedicated SWL...

By Anthony Smith

**F**eeling a little jaded with your hobby? Can't find your loggings? You *know* they're on a piece of paper somewhere! Or are they on your computer? Perhaps they are, but you can't remember the file name. Had a log book... lost the log book... found the log book, but can't be bothered using it; it's never there when I need it! Been there done that! Well, let's fix that problem now! We are going to have a look at a group of programs that I reckon is just what we SWLers, DXers and hams need!

First, let's define a few points about the different aspects of our hobby.

Do some people just listen? Yes indeed! SW Listening is a hobby in and of itself. SW Listeners (SWLer) monitor broadcast stations for their content only. Like SW DXers, SWLers keep track of the stations they've heard, but most do not chase after rare, hard-to-hear stations or QSL cards.

What is SW DXing? Short Wave (SW) DXing is the act of trying to hear — or monitor — as many distant stations as possible.

What kinds of stations can a DXer monitor? Mainly SW broadcast stations. I'm sure you've heard of some of these (like the BBC, Radio Australia, Voice of America or Deutsche Welle). SW DXers try to hear as many of these stations as they can — both the international, easy-to-hear stations, as well as the regional, hard-to-hear stations. But that's not all! Some SW DXers try to monitor utility stations that are in the business of providing commercial telecommunications. And some others monitor Amateur Radio, aircraft, military, maritime, and 'pirate' (illegal broadcast) stations.

And what do DXers do afterward? Nearly all SW DXers keep a record of every single station they've heard. Most also track the performance of their monitoring stations by

maintaining lists of the radio countries and CQ zones they've heard and verified. To verify stations, SW DXers send reception reports to the stations they've heard. In return, they receive QSL verification cards, which serve as proof that reception occurred. Some stations send schedules and pennants in addition to QSL cards. Sounds like fun! It is! It's... well... like a sport. Plus, SW DXers get to listen to many interesting programs on the SW broadcast stations!

What does Ham DX mean? In ham radio talk, the term DX means distance. So a DX station is a distant station. Ham DXing is the act of trying to talk to — or work — distant stations. Whether a station is a DX station or not depends on the portion of the radio spectrum being used.

Okay, now that you've got the picture, let's have a look at software logging packages to help us get more from our hobby.

### DXtreme SWRL V2.5

DXtreme SWRL V2.5 (Short Wave Reception Log) is a lite version of DXtreme Reception Log 2000 (described later). It lets short wave listeners and DXers log the stations they've heard, create reception reports, and track the performance of their monitoring stations. Around since 1995, DXtreme software was developed to enhance your radio operating experience by making it easy and fun to enter your loggings and manage your QSL cards! 'DXtreme' is a company that produces powerful and easy-to-use logging applications for radio enthusiasts such as: Short-wave DXers, Short-wave listeners, Broadcast band DXers, VLF, VHF, UHF DXers and Amateur Radio operators.

Like most Short Wave listeners and DXers, you want a Windows application that lets you log the stations you've heard, create reception reports, and track the performance of your monitoring station; and is easy to use.

DXtreme SWRL V2.5 gives you what you want! It takes advantage of the power of Windows to provide you with an attractive and familiar user interface that makes entering logs easy and fun. And it takes advantage of other Windows applications to let you create customised reception reports and track the performance of your station. Let's look at its features.

### Reception Log window

The first window you encounter when you start SWRL, Reception Log lets you log the stations you've heard.

Its easy-to-use interface includes many drop-down list box fields that make entering consistent data easy. Most of these fields are populated with data you maintain in SWRL V2.5 maintenance modules. A *Program Details* window is accessible from the Reception Log window.

File Edit Search Modules Reception Report Status Reports Help

### Reception Log

Station Data

Station: City: State: Country: CQ Zone: Station Class: Continent:

Date and Time

Date: dd-mm-yyyy Time: Start: End: Current Local Time: 17:05

Frequency, Band, and Mode

Freq: Meter Band: W/L: Mode:

SINPO Report Code

S I N P Q 5 5 5 5 5

Rig and Antenna

Rig: Ant:

Verification Status

Send Reception Report?: Yes QSL Received?: No

Language and Program Data

Language: Program Details

OK Cancel

Enter the name of the station heard.

View of DXtreme before adding data



Start	End	Details of Programs Heard
22:19	22:22	Spanish: Superb reception. Output of 350kW. But the azimuth is only 50 degrees?
22:22	22:24	If this is beamed to Europe, then 50 degrees would be a long path to Australia.
22:24	22:29	End of transmission confirmation in Spanish. Heard the Name Quito. Superb receipt.
22:30	22:30	Heard a number of beeps before loss of all signals.

OK Close Cancel

Enter the Start time. Use the format: hh:mm.

S I N P O Rig: DX-394 Radio Shack DX-394  
 5 5 5 5 5 Ant: LW Longwire 75 feet

Verification Status: Send Reception Report?: ☐ Yes ☐ No QSL Received?: ☐ Yes ☐ No

Language and Program Data: Language: SP Spanish Add a Log Entry  
 Program Details Cancel

Program Details selected.

On it, you can enter detailed information regarding the programs you've heard.

SWRL V2.5 subscribes to the rule that data should be entered only once! As such, all of the information you enter on the Reception Log and Program Details windows appears in reception reports created by SWRL. Reception Log's menu bar permits you to access the other functions of SWRL. Delete and search for reception log entries, perform maintenance functions, set preferences, manage reception reporting, run performance reports, and access the on-line help system.

## Reception Report facility

SWRL includes a powerful Reception Report facility that enables you to easily create a customised reception report for the station displayed on the Reception Log window. The reception report has precisely the format and wording you want, and it includes all of the information entered for the station on the Reception Log and Program Details windows.

RECEPTION REPORT

From:  
 SMITH Anthony F.  
 263 Sumner St.,  
 Rockhampton North. QLD 4701  
 Australia

To:  
 Station: Radio Habana  
 City: Havana  
 Country: Cuba

Dear Sir or Madam,

It is with great pleasure that I report the reception of Radio Habana.  
 I heard your station on 01-February-2000 from 21:00 to 21:30 UTC, on a frequency of 13.750.

Reception Quality  
 The SIMPO code that describes the reception quality of your broadcast is:

S: 4  
 I: 5  
 N: 3  
 P: 5  
 O: 3

Receiver and Antenna  
 The receiver and antenna I used to monitor your broadcast were:

Receiver: National PROCEED 4800D  
 Antenna: Longwire 75 feet

Program Details  
 Your broadcast was in the following language: English. The following list describes the programs I heard:

Start-End Program Details  
 21:00-21:02: Start of english broadcast. Report on Cuban boy in USA.  
 21:02-21:03: Report on US Forces target range Island.  
 21:05-21:09: Report on World sports.  
 21:09-21:10: email caracas@hb.org?  
 21:10-21:15: "This is Radio Habana calling" program on Radio communications. Talk on require-  
 21:15-21:27: ments for morse code speed of 5wpm. 21:17 Talk on antenna position.  
 English broadcast finished @ 21:30gmt  
 I really enjoyed listening to Radio Habana.

If the information in this report matches your station log, I would greatly appreciate receiving a QSL (verification) card or letter from you.

Thank you very much for reading my report. I hope your engineers found it useful.

I look forward to hearing from you soon.

Good luck and 73,  
 SMITH Anthony F.

## Integration with other applications

The Reception Report facility integrates with other applications, such as Microsoft Word.

If you have Word 6.0, 95, 97, or 2000 on your system, SWRL creates a reception report based on a template document. As part of the report creation process, SWRL V2.5 automatically activates Word so you can view, edit, and print the report.

If you don't have Word on your system, SWRL V2.5 integrates with WordPad (Windows 95, 98, and Me systems) or Write (Windows 3.1x systems) to create a reception report based on a script.

Each script contains 'boilerplate' text that appears in all reception reports created using it. DXtreme Software provides two scripts — one in English and the other in Spanish. As part of the report creation process, SWRL V2.5 automatically activates WordPad/Write so you can view, edit, and print the report.

## Multiple Templates and Scripts

You can create, edit, and maintain as many additional templates (using Word) and scripts (using SWRL's Script Editor) as you want.

When you create a reception report, SWRL displays a dialogue box that lets you select the template or script you want to use for the report.

Maintaining multiple templates and scripts allows you to create reception reports in other languages, or in a variety of formats for reporting to different classes of stations — like Utility stations versus Short Wave Broadcast (SWBC) stations.

When creating reception reports in other languages, you can use AltaVista's free Translation Service.

## Performance and Station Reports

You can track your monitoring station performance for SWBC stations only, Utility stations only, Ham stations only, etc. Or, you can track performance for all classes combined.

## Performance Reports

The Performance reports include the following:

- Summary: Shows you the total number of stations, countries, and CQ zones you've heard and verified. It also shows you the number of countries you've heard and verified by continent.
- Countries: Lists alphabetically the countries you've heard, verified, and heard but not verified.
- CQ Zones: Lists numerically the CQ zones you've heard, verified, and heard but not verified.

The date format for SWRL V2.5 can be MM/DD/YYYY, or DD-MM-YYYY. There's more, much more. Why not check it out on the web <http://www.dxtreme.com> and you can download a free demo to try before you buy!

The price represents extremely good value for such a program, only US\$31.95 inc freight to our shores. That works out to about A\$60 or NZ\$71. Use it... and you won't lose it! Where do you get it? From the web address above.

The requirements for Using DXtreme SWRL V2.5 are very simple — no power-hungry requirements here. An IBM PC or compatible, equipped with the following items:

- 486SX or better processor
- Four MB or more of memory
- VGA, or better monitor (SVGA 1024x768 recommended)
- Hard disk drive (SWRL V2.5 requires a minimum of 2 MB disk space)
- Microsoft Windows 3.1x, Windows 95, Windows 98, or Windows Me

*We've looked at just one of these amazing suite of packages, but the Editor assures me the rest are going to have to wait until next time. See you then!*

R



# TECHNICALLY

## • Speaking •

By Ron Bertrand, VK2DQ  
PO Box 123, Eagle Heights, QLD 4271  
E-mail: [ron@radiomag.com](mailto:ron@radiomag.com)

## Part 4: Understanding Antennas and Transmission Lines

*I have had quite a few letters about last month's Technically Speaking. Thank you, your feedback is welcome. There has been a lot of interest and questions about 1/4-wavelength stubs for curing television interference problems. Due to the popularity (and the questions) we'll talk a little more about them this month. We also discuss an awkward, though too often typical, TVI problem from a reader.*

*I have been asked "What transmission line should I use for this or that band of frequencies?". This is not such an easy question to answer, as there are so many factors involved. So we have a look at different cables and their selection from a practical viewpoint. Finally we'll have a look at how an SWR meter and a Noise Bridge works.*

Last month we looked at how a simple length of open circuit 1/4-wave transmission line could be used to cure many forms of interference. I have used the 1/4-wave stub for curing TVI problems myself far more times than I could hope to remember. In the vast majority of cases it works. It's quick and costs next to nothing.

Let's recap for a moment. Suppose a signal on 28 MHz was getting into a TV (or any other receiver) and causing overload interference. We could cut a length of reasonable quality transmission line of any characteristic impedance to a 1/4-wavelength at the frequency you want to stop (28 MHz) and connect it to the TV's coaxial feeder at the back of the TV via a "T" connector. The stub will act as a notch (bandstop filter) for 28 MHz. For details and a discussion of the theory see the July issue.

(Back copies of all issues of Radiomag are available. Post a \$7.50 cheque or money order made out to Radiomag Pty Ltd to the editorial address, or send an E-mail with your credit card number and address. Ed.)

### Half wave and other longer stubs

Some correspondence this month about stubs of lengths other than a 1/4-wavelength. A 1/2-wave open circuit stub will create a notch of around 22-25dB on its tuned frequency.

A stub that is an odd multiple of a quarter-wave will also reflect its open circuit termination to its input as a short circuit and produce a notch.

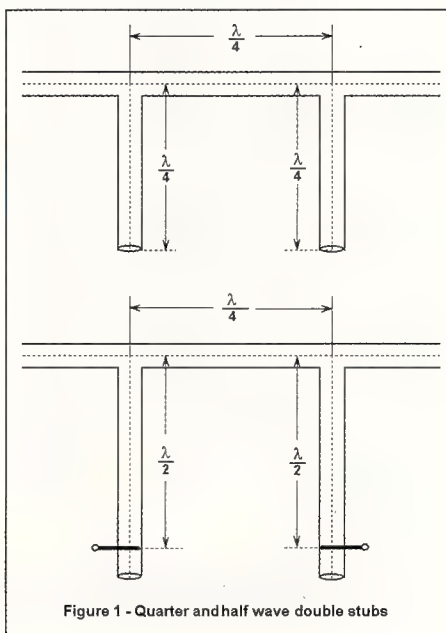


Figure 1 - Quarter and half wave double stubs

So a notch filter could be made with a 1/4, 1/2, 3/4-wave line, and so on. A 1/2-wave short-circuited line can also be used to create a notch. See Figure 1.

A stub filter relies on standing waves for its operation. All of the power arriving at the open or short circuit termination is reflected to the input. At the input the reflected and incident waves combine to produce the input impedance, either a short or an open circuit. Since the reflected wave has had to traverse the stub length (twice) we get neither a perfect open circuit (infinite impedance) nor a short circuit (zero impedance). The more loss the cable has, the less effective the stub. Line loss is a function of frequency and length. For this reason it is not a good practice to use stubs of lengths greater than 1/4 or 1/2-wave.

Some references say that it is possible to obtain a notch depth of 30 dB for a single stub and 80dB with a double stub. See Figure 1 again. The depth of the notch is dependent on the losses of the cable. I have never been able to produce this notch depth using even very high quality cable. In practice, using practical cables, I have found that you can expect a notch of 22-25dB for a single stub and 35-40dB for a double stub. I have also found that a single stub notch filter will almost always be adequate for TV interference problems from HF radio. A notch depth of 25dB means a signal will be reduced to approximately 1/10th of its original level. This is more than adequate for most applications.

### What type of transmission line should I use?

As we have learnt, a transmission line exhibits a certain amount of loss caused by the resistance of the conductors and heating of the dielectric. The attenuation of a given line is usually provided by the manufacturer as decibels per one hundred feet. One hundred feet is 30.48 metres. Figure 2, a substantial graph on the opposite page, shows the most common transmission lines used by hobbyists and communication professionals. It is important to realise that the attenuation figures shown in such graphs as Figure 2 are for matched transmission lines. When a line – particularly a coaxial line – has standing waves, it is subjected to higher currents and voltages than it would were it a flat line (no standing waves). To determine the total line losses with standing waves refer back to the nomograph in Part 2 of this series.

When trying to decide about the appropriateness of a transmission line for an application, like many other decisions, it nearly always comes down to compromise. How much line loss are you prepared to have? Will there be standing waves on your line? If there are, then the decision is more difficult as the losses may increase dramatically with higher SWR. There is always the question of cost... and some types of line are darned expensive!

If you are prepared to use open wire line, then you can most likely make the line yourself, and things like SWR and losses are not an issue at all. Using open wire requires a lot more operator care in terms of physical installation to maintain the 'balance' but the benefits are great. You can of course use coaxial line inside the station and then break into parallel feeder via a balun outside.

Table 1 shows decibels expressed as a percentage. For example, 1.24 decibels is the same as a 25% loss.

Table 1. Line loss in decibels and percentage

Decibels	Percent loss
0.45 .....	10%
1.25 .....	25%
2.0 .....	33%
3.0 .....	50%
6.0 .....	75%
10 .....	90%

Most would consider a loss of 3dB as unacceptable. I certainly would. If a transmission line has a loss of 3dB, then whatever the power delivered to its input, only half will arrive at the load.



## A reader's TVI problem

A reader who we'll call Paul had a problem with his two metre transceiver into a nearby TV system. He tried using a  $\frac{1}{4}$ -wave stub and was disappointed that it did not appear to have any effect at all! Paul told me that the interference from his transceiver was affecting *all* TV channels. Not every channel was affected to the same extent but nevertheless *all* of them had some interference.

This indicated that **overload** was the problem. Overload occurs when an unwanted signal is just too strong for a receiver to reject. If his transmitter was spurious then it is very unlikely that all channels will be affected.

I asked Paul to tell me as much about the neighbour's TV system as he could. It turns out that the viewer has a distribution amplifier. These devices are just broadband RF amplifiers with little or no front-end selectivity. Distribution amplifiers are necessary where a number of TVs are to be fed from a common antenna and the TV signal is not adequate. Paul's transmitted signal was entering the distribution amplifier and overloading it through no fault of his own.

Once any amplifier is overloaded it becomes non-linear and functions as a mixer of all signals. Since these amplifiers are likely to be overloaded by any nearby radio transmitter on any frequency I suggested that a good quality high pass filter would be a better approach. These are, however, expensive (around \$80). Paul, like many others, is now up against a problem that many will at some time face.

The overload is not the fault of Paul's transmitter. There is never any guarantee that any filter will work until it is tried. If Paul does buy such an expensive filter then his 'good intentions' may be interpreted as an admission of liability or at least responsibility. Then, if the cure doesn't work, the whole thing can become messy indeed. There are enough complexities in this for a full article so we'll save that for another time.

## A stub to the rescue!

Since Paul only transmits on the two metre amateur band I suggested he try a  $\frac{1}{4}$ -wave transmission line notch. I also suggested he *not* use high-grade cable, as this would make the notch broader.

A stub notch using RG58 was cut and tuned (using the transceiver's receiver) to 146 MHz. He then placed it on the antenna side of the distribution amplifier that was thankfully accessible in the garage. The problem was solved.

Always check the TV reception to ensure the stub is not working on odd quarter wavelengths to notch a desired channel. This rarely happens but you must ensure to check for any reduction in TV signal.

Paul was unlucky to have a distribution amplifier close by. He is lucky to only operate on one band (for now). The stub fixed the problem, but the distribution amplifier is a future problem waiting to happen. Any nearby unwanted RF signal is likely to overload it. At least he has demonstrated (hopefully) to the neighbours the problem lies in *their* amplifier.

Beware of these amplifiers, folks! Sometimes amplifiers are placed right up at the antenna, and these "Mast Head" amplifiers can be a logistical nightmare to do anything with.

*73 Ron*

Cable Attenuation dB Per 30.5 Metres (100 Feet)

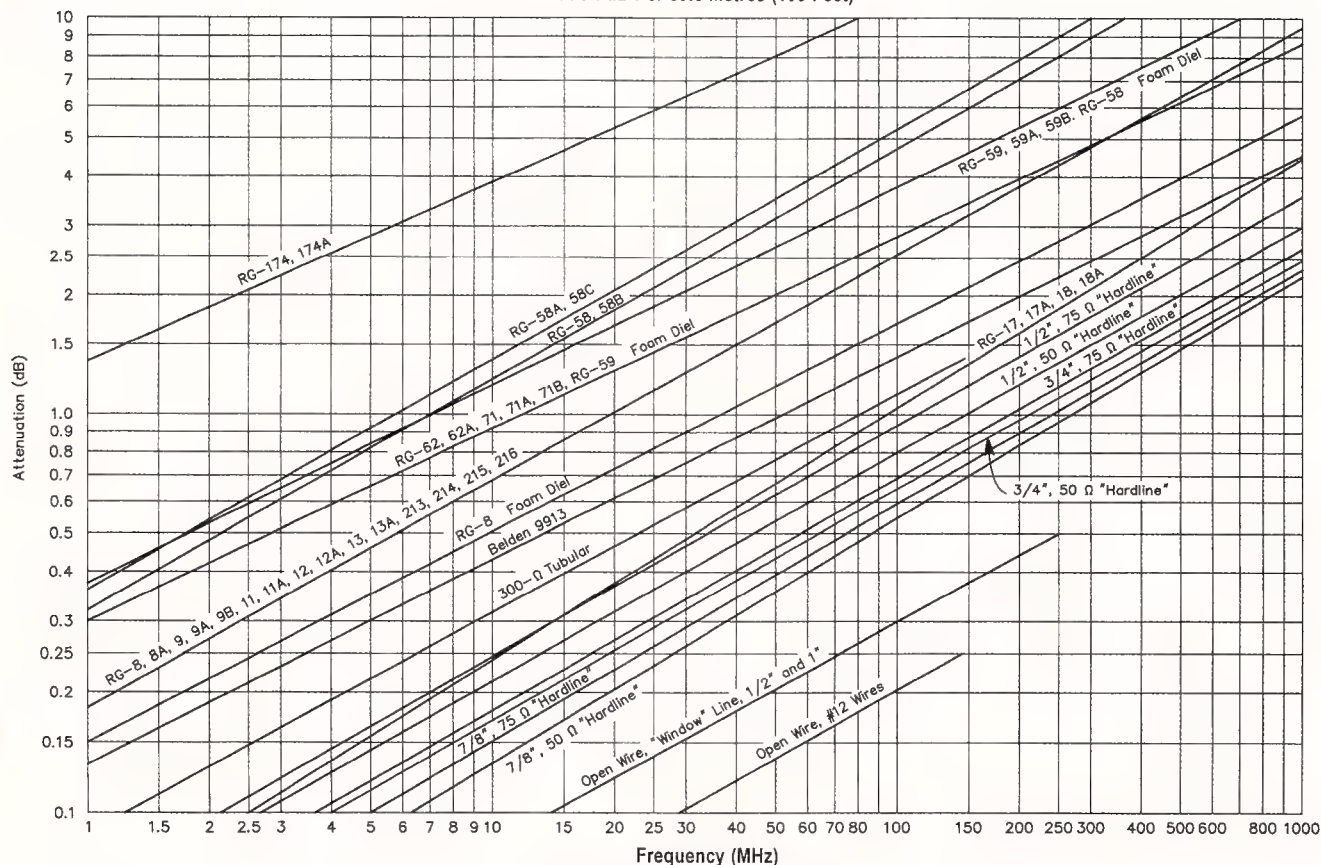


Figure 2 - Matched line cable loss



# TECHNICALLY • Speaking •

On the lower radio bands, it is fairly easy to obtain low losses with inexpensive cables. Take RG58, which in anyone's book is not a particularly low loss quality cable. Yet at 10 MHz and below, a 30 metre length RG58 has around 1.25 dB loss or better.

In Figure 2, all lengths are based on 100 feet, or approximately 30 metres. Most would accept this loss. But even 1.25 dB is a loss of 25% of the input power! Look at the attenuation of 30 metres of RG58 at 30 MHz. It is just over 2dB. The means, as per Table 1, that fully 33% of the power into the line will be lost in heat even if it is perfectly matched.

Would you use RG58 at 145 MHz? Before answering, have another look at Figure 2. A 30 metre length of RG58 at 100 MHz will have an attenuation of about 4dB. So, can we use it? Well 4dB loss is a lot of loss, but this is for 30 metres. Fifteen metres would only have half the loss of 30 metres, or 2dB. This would be acceptable in many applications though perhaps pushing the upper acceptable limit. Seven and a half metres would only have 1dB loss. So you see, it all depends on the length of line, the frequency of use, and whether the line is expected to have standing waves.

Suppose you want a line for use 450 MHz. This is close to the 70cm amateur band and also a popular land mobile band for UHF receiver enthusiasts. Suppose you decided to use RG8 or RG213. This, as shown in Figure 2, has a loss of 6dB/30m. If you were using 10 metres the loss would be  $6/30 \times 10 = 2\text{dB}$ . For longer lengths you will most likely want to go for something like Belden 9913 (3dB/30m, or 1dB per 10 metre length).

For very short cable runs like those in a vehicle the type of cable is not very critical. For commercial installations above 50 MHz 1/2-inch 50Ω hardline is the preferred choice.

Notice how open wire "window" line is almost out in a class of its own. All parallel lines are very low loss. So low, in fact, that they are hardly bothered by standing waves. Parallel lines are also very easy to manufacture. Almost any wire and any reasonable insulator can be used for the spacers. In most applications it is not even important to keep the spacing the same! If you ever get the opportunity to experiment with parallel line, do it — you may be pleasantly surprised.

## The SWR meter

By far the most popular instrument for checking for the degree of line-load match is the SWR meter. This is an appropriate point to discuss the operation of one popular type of SWR meter. This instrument uses transmission line principles we have discussed. Have a look at Figure 3, above right.

A forward-going RF wave travelling through the VSWR meter from the transmitter to antenna will induce small forward-going waves into L1 and L2.

The forward wave induced into L2 will arrive at R2 and be totally dissipated, since R2 is equal to the characteristic impedance formed by the centre conductor in the VSWR meter and L2. However, the forward-going wave induced into L1 will be rectified by D1 and this rectified current will produce a DC voltage on C1.

The level of the voltage on C1 is directly proportional to the forward voltage.

If the transmission line is not terminated in the correct impedance, then a reflected wave will be present which will travel through the VSWR meter from antenna to transmitter and induce currents into L1 and L2.

The reflected wave induced into L1 is absorbed by R1, but the reflected wave induced into L2 is rectified by D2 and a DC voltage is developed across C2 that is directly proportional to the voltage in the reflected wave.

So it can be seen that the upper circuit consisting of L1, C1, and D1 is only responsive to forward waves and the lower a circuit consisting of D2, L2, and R2 will respond only to reflected waves.

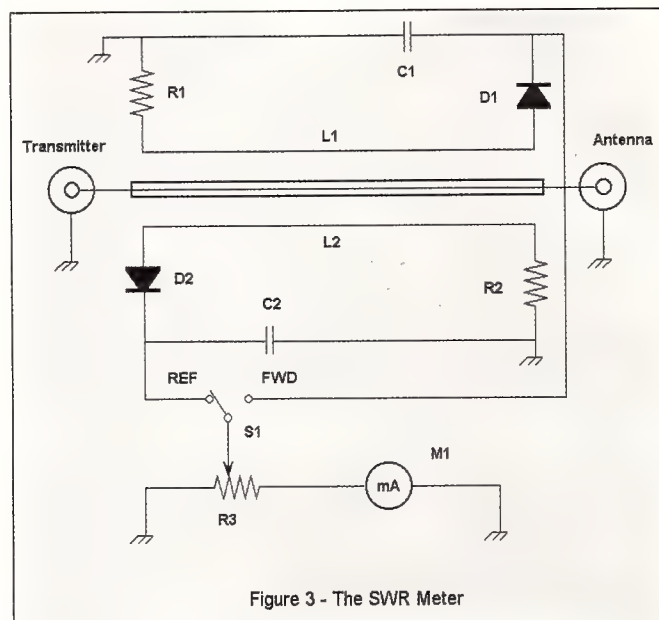


Figure 3 - The SWR Meter

The switch S1 enables the operator to switch between the forward and reflected voltage readings. M1 will read the voltage across C1 and C2, showing forward and reflected voltage respectively.

Though this meter could be calibrated to measure forward and reflected voltage, it is usual to use it only to measure VSWR and the operator is frequently unaware that it is in fact a forward and reflected voltage meter.

## Using the SWR meter

For VSWR measurements the operator 'sets' S1 to the forward position and, while transmitting, adjusts R3 for full-scale deflection on M1. Now the forward voltage is referenced to full scale. S1 is then switched to the reflected position and the pointer on M1 will directly read the coefficient of reflection (K).

If the forward voltage and reflected voltage are equal (open or short circuit termination) then the reflected reading will be full scale indicating a K of '1'. If there is no reflected voltage (a perfectly matched system) then there will be no deflection of M1 indicating a 'K' of zero. If 50% of the forward voltage wave is reflected then M1 will indicate half scale, a 'K' of 0.5.

Therefore, you see, the most common type of VSWR meter is really measuring the coefficient of reflection. However, there is a simple relationship between 'K' and VSWR:  $VSWR = (1+K)/(1-K)$ .

For example, suppose the reflected voltage came to half-scale, where K=0.5 — what is the VSWR? Working it as outlined above,  $VSWR = (1 + 0.5) / (1 - 0.5) = 3$ . This explains why all (non-amplified) VSWR meters have '3' calibrated at centre scale. If you wanted to, you could calibrate the scale from 0 to 1 using rub-on lettering and it would then double as a coefficient of reflection meter.

## Reflectometer

In the schematic diagram of the VSWR meter, the section of the circuit consisting of the two pickup inductors (L1 and L2) and their associated terminating resistors form, in fact, a dual reflectometer since it has two loops for simultaneous measurement of forward and reflected voltage.

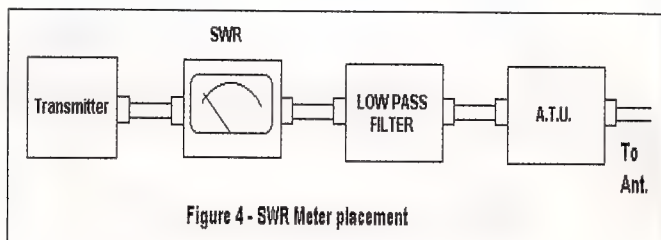
A reflectometer can be made or purchased as a stand-alone test device. To use a reflectometer, a 'level indicating device' such as a power meter or RF voltmeter must be added. Some instruments have a moving coil meter calibrated in watts connected to each port of a dual reflectometer.

## SWR meter placement

SWR meters can be a real problem, because they contain diodes. If you were to plot the voltage across, versus the current through, a resistor, you would obtain a straight line. The voltage across and the current through a resistor are directly proportional.



We say a resistor is a *linear* device for this reason. A diode, on the other hand, is a *non-linear* device. Any non-linear device (or a linear device with unwanted nonlinearity) has the potential to mix complex signals and produce new frequencies that can cause interference to other services. Unless you know that your SWR meter is not problematic like this then it is best to connect it as shown in Figure 4. The low pass filter (and to some extent the antenna tuner, or ATU) placed after the SWR meter will suppress mixing products should they occur. If you don't have a low pass filter and you have an interference problem, the first thing to try is to remove the SWR meter to see if it is the cause.



While we are at it, the low pass filter must never be placed in a portion of the line with standing waves. These filters are designed to work in a line of appropriate impedance – typically 50 Ohms. Placing the low pass filter on a line with standing waves could subject it to high impedances (high voltage) and destroy it. High voltages (associated with a high impedance) can puncture the dielectric of the capacitors in the filter. If this happens, the filter can then become another source of interference even if it is returned to the correct position.

### SWR meter accuracy

SWR measurements are easy to make, and are usually a good check of the degree of impedance match of your antenna system. The meter is a very good indicator of a fault condition anywhere on the antenna system. Most transmission line or antenna faults will alter SWR. Such a *change* is an indicator to you that something is wrong.

However, the actual accuracy of the SWR meter can vary substantially. Providing you understand the significance of the reading, an absolute value of SWR is rarely important.

The SWR meter in Figure 4 could just as easily be labelled, from right to left, as 'BAD', 'GOOD', 'BETTER', 'BEST', and it would still be a very useful instrument!

In fact, a meter calibrated in such a way may cause less operator grief and discourage the hours of effort some operators spend playing with antennas and lines in a vain effort to reduce the SWR from, say, 1.5:1 to 1:1 in the absolutely false belief that it really does make a difference to performance!

### The Noise Bridge

The noise bridge is a low cost impedance-measuring device. With a noise bridge you can...

- measure the input impedance of a transmission line;
- tune an ATU without transmitting;
- determine the feedpoint impedance of an antenna;
- cut a length of line to a certain length... and much more.

About the only shortcoming of a Noise Bridge is that the upper frequency limit is usually the two metre amateur band (around 146 MHz) for the best of them. All of them work extremely well on the HF bands. If you are an antenna experimenter this is one item of low cost test gear you should seriously consider purchasing or building.

A noise bridge contains a noise source, and a LC bridge. It is used to determine the resistive and reactive parts of unknown impedance.

The noise source is typically a reverse-biased zener diode, which produces useable noise voltage output from about a few hundred kiloHertz to around 100 MHz. The noise is amplified by a wide-band amplifier and then applied to a bridge network. An unknown impedance (usually an antenna) is connected to one arm of the bridge and the bridge adjusted for balance. A receiver is connected to the bridge to act as an RF indicator for balance. There are two balance controls that are calibrated 'R' and 'X' for the resistive and reactive components of the unknown impedance respectively.

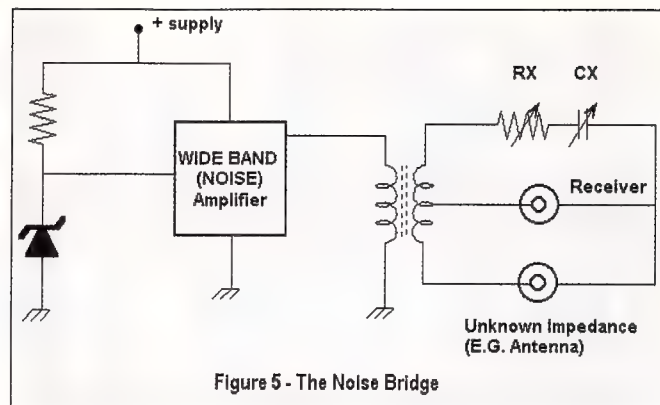


Figure 5 - The Noise Bridge

You simply connect the noise bridge to, say, an antenna (the unknown impedance) and a receiver. The bridge will produce a lot of noise on the receiver. The receiver is tuned to the frequency where you are taking the measurement. The 'R' and 'X' knobs are adjusted until the noise 'nulls' (when the bridge is balanced). You then read off the antenna's impedance as indicated on the 'R' and 'X' knobs.

The Noise Bridge measures complex impedance. That is, the 'R' and 'X' controls tell you the resistance and reactance of the unknown impedance. If you use a noise bridge to measure the feedpoint impedance of an antenna, you are trying to build or tune, then any reactance would indicate to you that the antenna is not resonant.

A useful trick with a noise bridge is tuning an antenna tuning unit (ATU) without transmitting. Suppose your ATU is designed to provide a 50 Ohm match to your transmitter. Just set the noise bridge to R=50; X=0 (50 Ohms of resistance and no reactance). Connect the 'unknown' impedance socket to the ATU and your receiver to 'receiver'.

Set the frequency of your receiver to the frequency you want to tune the ATU (the frequency you want to transmit on). Noise will be heard in the receiver.

Adjust the controls on the ATU or minimum or no receiver noise. No noise means the input impedance of the tuner is exactly 50 Ohms (R=50; X=0) and perfectly matched.

Remove the Noise Bridge, connect the ATU to the transmitter and transmit with a perfect match! All achieved with no RF whatever...

A noise bridge is one of the most useful items of test gear that any antenna builder/experimenter can have in their kit. If you really want to understand antennas and transmission lines then a noise bridge is highly recommended. They are very easy to build and calibrate. In fact, it would be a very inexpensive project. Perhaps the only disadvantage of a noise bridge is the upper frequency limit of typically 100 MHz though, as I said, some do go higher.

(As an aside, Ron rang me one afternoon while preparing this work to ask that I source a Noise Bridge from one of our advertisers for photography and a quick review. Despite my making a lot of phone calls, do you think I could actually find one? It seems that Emtronics last made its Noise Bridge product several years ago, but discontinued production to concentrate on its big "movers", linear amplifiers. If there's enough interest from you, we might whack out a reasonably-priced Noise Bridge kit project. Write or E-mail the Editor if you're interested! Ed.)

The alternative to a Noise Bridge is the far more expensive Antenna Impedance Analyser. These devices, best known in the MFJ range, measure impedance across a wider range of frequencies. They do not rely on wide band noise for the source of RF. These devices, whilst extremely useful, are so much more costly than a noise bridge (generally several hundred dollars), to the point that few individual stations could justify the expense.

Well, we are done with most of the essential basics of transmission lines. Next month we start looking at **electromagnetic radiation and antennas**. Over the next few issues we will look at how antennas really work. I won't be explaining in detail how to build this or that variety of antenna. Our objective instead will be to understand how antennas work. Until next month, then, 73 de Ron.

R



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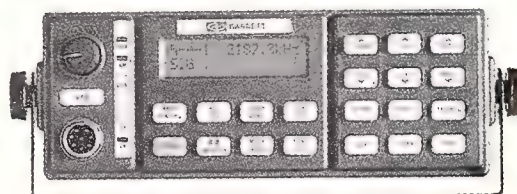
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**CODAN NGT** with auto tune antenna ..... **POA**

**BARRETT SB950** (pictured) with auto tune antenna . **POA**

**QMAC HF90** with auto tune antenna ..... **POA**

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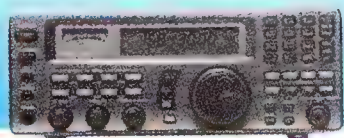
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IC-A4C  
IC-A22  
IC-A22S  
IC-A200  
IC-A110

### MARINE BAND

IC-M1  
IC-M45  
IC-M59



IC-756PRO

### AMATEUR BAND

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# RADIO active

## History with a twist!

With Kirsti Jenkins-Smith, VK9NL

PO Box 90, Norfolk Island, South Pacific 2899

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### Globalisation is nigh!

The idea of sending a card to confirm a wireless contact has been around about as long as amateur radio. It must have been gratifying for an Australian operator in the early days to receive confirmation of a contact made with an American station for instance. Equipment was simple and mostly home-brewed so such proof of a QSO would have been treasured. Those early cards, proudly exhibited on the shack wall, were fairly basic in appearance, although giving much the same kind of information about band, equipment and so forth as those we send out today. What has changed over the years is the sheer volume of cards on the move around the world today.

With better equipment came more contacts with far away countries. Pre-WW2, ARRL in the USA established an award for having worked 100 countries — the DXCC. This can be upgraded all the way to 'Honor Roll' which requires proof of having worked every country on the DXCC list; all 332 of them. The majority of these countries have a relatively large amateur radio population, offering much activity, and can therefore be worked fairly easily. Smaller, less developed or less inhabited countries are not so readily available; not to mention the uninhabited countries which are generally not available at all!

And so the DXpeditions came into being. It started with a trickle. One or two operators would travel to some 'needed' country, set up a station and make a number of QSOs. This sort of operation became very popular and has by now developed into a rash of DXpeditions to all sorts of places. The cost can often be very high, but DXers will usually rattle together a fair amount of the necessary funds in the form of club donations. The DXpeditioners themselves also contribute considerable sums out of their own pocket.

In due course, QSLing takes place. This can be done in two ways. There is the 'direct method' with many DXers putting an extra dollar or so towards return postage in the envelope with the QSL card. Thus it may even happen that a DXpedition 'breaks even' at the end of it all.

The other way is to QSL via the 'buro', sometimes referred to as a national society's 'dead letter box'. In the case of DXpeditions, although buro QSLing is usually provided for, experienced DXers still prefer the direct method where they can expect to receive their card within a reasonable time.

There have been many complaints about the present system. The 'buro' is slow. QSL managers are sometimes dishonest. Resident DX stations are lazy and/or dishonest. Moan and groan!

E-mail QSLs are not accepted by ARRL DXCC due to a lack of security and opportunities for fraud. It is intolerable to have to resort to the mail system in the 21st Century... such a let-down in our technological age!

But fear not! At the 2001 Annual Board Meeting of ARRL, the concept of a *Logbook of the World* was discussed. The idea is that everybody can eventually submit his or her log to this logbook and the whole caboodle be integrated into the ARRL headquarters systems with appropriate security methods in place. Everything, from confirming QSOs to applying for ARRL awards, checking one's DXCC status etc can then be done via the internet. A definite alternative to the QSL card, eliminating the cost of both postage and card just for the cost of a computer and whatever one pays the server. It sounds like a dream come true, but is it practical?

I don't suppose every one of the world's millions of 'hams' would submit their entire logs to such a logbook. A database of hundreds of millions of entries might just be a little too ambitious. And a resident DX station operator is not likely to start typing up some 20 years of QSOs, maybe around 50,000 entries, just to submit the log to the internet. Many people have better things to do with their spare time!

But, in the case of DXpeditions, the proposed logbook certainly offers opportunities. Computer logging with all its inherent typos is already in use. There is usually an internet website where hopeful DXers can check whether his or her call has in fact been logged, before actually sending off for the card.

In the case of the *Logbook of the World*, the whole DXpedition log, including dates, times, band and so on, can be submitted. A card will not be necessary as the QSO is already logged in the ARRL database. If we want written confirmation, we can presumably get a one-line printout to pin on the wall. Not quite the same as a glossy card with pictures and text, but there we are...

DXpedition QSL managers would lose the direct contact with the DXers and chances of 'breaking even' on the cost of the operation would diminish. But not to worry. With globalisation we may well see a global DXpedition fund, managed by a 'big brother' group who will decide who goes where. The operations can be streamlined into military precision. No more of these amateurish private individuals muddling around the globe on their own in the New World Order! (Hup! one, two, three.)

The QSL card as such is of course not going to be outlawed. Those of us who may be left floundering in the wake of progress can still collect cards from like-minded individuals and remember the thrill of working so and so. My most precious card, for instance, is not from Bouvet or even from North Korea. No, it is a simple card from Germany, received at the radio school in Norway where I did my training in 1956. The students had been let loose on the amateur radio bands (only on CW) so they might gain some experience in the real world with QRM and QRN, weak signals, shaky fists et al. One of my very first contacts was with Ernst, DL6DV, whose card arrived at the school in due course. I duly filled in the return QSL which was sent off and that was that. 45 years down the track, after mentioning this QSO in one of my books, a friend of Ernst's, Gerhard, DL6YK sent me that QSL which I had written so many years ago. From it I see that "wx was wet and windy with 0°C temperature. I ran 40 watts into a Hallicrafters transmitter with a Marconi antenna, and the receiver was a HRO-7R." On Ernst's card I see that I was the first LJ station he had worked. (LJ2K).

Those two cards beat any computerised one-line printout verifying a QSO! Of more recent vintage I have all my DXCC cards plus many others from both exotic and not so exotic places, as well as cards from maritime mobile stations I have worked. Swaying palms, snow-capped mountains, desert islands and glowing sunsets. Smiling faces of operators, tiny shacks and palatial shacks, antenna farms and simple verticals. To look back on these cards and wonder at the magic which made it possible to be in direct radio contact with people in all these places, is truly amazing.

No, I must confess that I am not in any hurry to see the *Logbook of the World* become a reality... **R**



I have had to think, lately, about a question of the duty of care that we owe to our "neighbour" when we transmit on our radios. By radios I am referring to all operators of transmitting equipment, whether commercial, amateur, citizens band or whatever.

I have followed the debate about the possible link between hand-held phone use and certain forms of cancer, with more than passing interest. Put it this way, it has sufficiently concerned me that there *might* be a link, that I avoid using my phone wherever possible. If I do have to use it on the train of a morning, I choose to use one of those confounded microphone earphone combinations so as to minimise inconveniencing my fellow travellers whilst at the same time being able to keep the antenna clear of my body. Now, I am not saying that phones do cause cancer. I am more concerned never to find out the hard way that there is a relationship.

However, all of us must by now be aware that there are electromagnetic fields generated by our transmissions and that there are a very simple series of calculations which we can all do, to determine whether our station falls within or without the required minima.

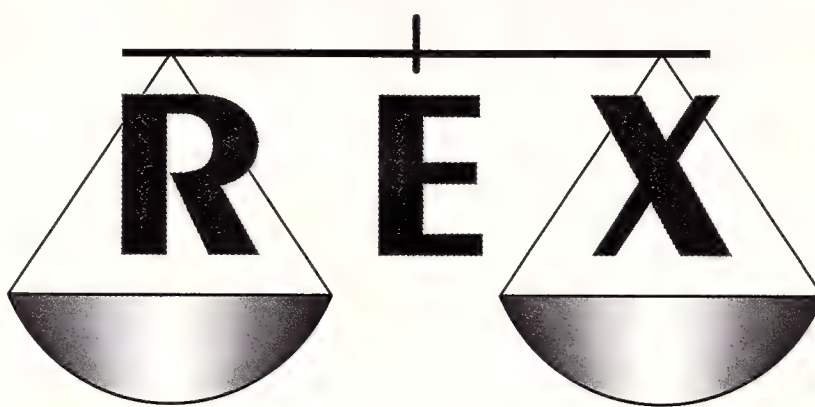
I wonder how many readers of this magazine have taken the time to check their system? If the mathematics are too difficult for you, then it is important that you get a friend who can do the sums to help you. Whether you are using HF, or VHF, gain antennas or unity gain devices, each rig that you use must be assessed, as the radiation levels vary with wavelength and antenna gain. I am feeling quite virtuous because my simple station did not take a lot of time to check. In fact my beam failed because it was too close to my boundary. The cure was to simply move it a few metres.

Over the years I have written and commented on many of the problems that electronics enthusiasts have had with obtaining permission from their Shire Council to erect towers. Well, what about this idea? The most simple way of ensuring that we do not expose our neighbours to excessive RF fields, is to elevate our antennas out of harm's way.

I wonder therefore whether the Shire Councils are prepared to accept the potential for expensive litigation when a neighbour decides to take on an operator of a two-way radio, who was refused permission to put his antennas 50 feet, whoops, 16 metres, up in the air. Have you noticed that on some nice high hills, such as around the Editor's mountain, there are commercial systems on power poles which are only metres from residences. It is difficult to believe that even unity gain radios in such places would meet the standard. I am surprised that Chris lets them stay there.

Council permission is not needed to poke a whip antenna out your window or to run a dipole up a convenient tree. Many operators have taken the path of least resistance and limited their operations because their Council was difficult to get along with. However, those operators will often now find that they are exposing the people next door to impermissible levels of RF. So I suspect that there will be greater interest in mounting our antennas where they belong, ie, as high in the air as we can manage.

# JUDICIOUS



The problem, fortunately, is not going to be confined to amateurs or citizens band operators as otherwise we would have a very soft voice with which to speak. However, all operators are going to have the same problem and Councils may find themselves with a major problem. I am sure that they want the rates and charges which they can levy on radio installations. They will have to lift their game if their ordi-

nances limit the height of towers or radio masts as they might be exposing themselves to the downside of antennas at or below roof level. Remember that many commercial and pager transmitters have antennas with gains of up to 6dB and run power levels up to 100 Watts or more.

So, to get back to my starting point, I have been thinking that it was probably time to remind you, the reader, of the duty that we owe to our neighbour. In the legal sense, 'neighbour' means a person with whom we might expect to come into contact, whether we know them or not. For instance, as motorists, every other motorist comes within the legal concept of a neighbour which is why we owe all motorists a duty of care to take reasonable precautions to avoid injuring them. The same applies to all other users of the roads, be they on a bicycle or on foot. The category of neighbours in any given situation is not limited by geography but rather by a legal concept known as "proximity". A person who lives 10 kilometres away is hardly likely to be your neighbour in the sense of radio transmissions, but if you were transmitting laser beams that could harm them, they would, in that limited sense, be your neighbour.

Similarly, if you use a handheld radio on the train or in a tram if you live in Victoria, you are exposing all your fellow passengers to RF which, whilst not as obvious as tobacco smoke, might be shown in time to come to be a cause of cancer or some other medical condition.

I am most desirous of minimising the risk of injury to myself and my spouse. I am not happy at the possibility that my transmissions might be, unknown to me, exposing people around my location to harmful levels of RF. I have gained some consolation by going through the exercise, step by step, in relation to the bands on which I operate.

If you do expose your next door neighbour to such levels of RF there are a number of remedies that they could take. The obvious one, if they wanted to be litigious, is to seek an injunction to restrain you from operating your station. With these guidelines now published, I do not think it would be difficult to mount a case for an injunction against a non-complying operator. I see it as no more difficult than a Court issuing a domestic restraint Order, which is common enough these days. We can't claim ignorance, as the recommended levels and means of estimating them are plainly available for all to assess. The equations set out in *Amateur Radio* magazine can be easily done and overcome the need to engage an engineer to actually test one's system, as was initially envisaged when I wrote some years ago announcing the new standards.

If an injunction was sought, it would be much more simple to resist it by being able to demonstrate that you do comply with the recommended levels.



And if you are one of those who operates mobile, give a thought to the fact that you are also exposing other motorists to levels which at times could not possibly comply. Imagine sitting at a pedestrian crossing with your mobile whip on the front guard or bull bar of your car, just a metre or two from the people walking in front of you.

We have not heard the end of this problem. In fact, I suspect that as we gain more medical knowledge of the effects of RF exposure, the standards will tighten. But even without being legally required to tighten up our game, all of us can be proactive and, in so doing, we might also be reducing the exposure of the person who will always be closest to the coal face — ourselves.

Remember the comment of an old pilot who, when asked what it was that most affected his decision to retire, commented that he was aware that he was always the first person in the aircraft to arrive at any destination and he did not want this to ever be a violent impact with the ground. In other words, he was driven by a sense of self-preservation.

For ourselves, common sense suggests that there are many things that we can do to limit the risk of injury whilst engaging in our hobby. Even in our shack, we can ensure that we have an isolation switch to instantly turn off all equipment, a residual current detector, ensuring that all power supplies are safely secured in metal cases, that there are no high voltage leads lurking to grab an unwary or lazy finger, separate and substantial earthing of all our equipment and insulated tools for use in repairing equipment, checking that high value electrolytic capacitors have been discharged before trying to unsolder or unscrew them, and so on.

Similarly, we could also minimise our own exposure to RF by ensuring that our antennas are as far from us as possible, that we

use minimum power on hand helds and keep all metal panels secured on transmitting equipment whenever possible. Then, maybe we might grow old enough to have the time to enjoy our hobby. If history does show that there is no relationship, then we will have carried out some pretty basic safety steps anyway.

To conclude, can I recommend to any of you radio enthusiasts of any persuasion, that the trip to Dayton that Chris is talking about is not to be missed. His description of it is, if anything, down playing it. I know this does not sound like our Editor but be assured, Dayton is absolutely *huge*. You can spend the whole weekend there and still not cover all the exhibits. Accommodation in Dayton is non-existent for that weekend, so it pays to book with a group which will include it plus, of course, transport, which is also at a premium. If you happen to own a Guppy or similarly large freighter aircraft, you could put it to good use with all the unbelievably cheap bargains that weigh a ton. You might also fit in one editor with all of his new acquisitions!

If you are interested in the Air Force, Chris is also suggesting a visit to Vandenberg, another opportunity not to be missed. Then, if you still have the energy, the Smithsonian Institution in Washington DC is mind boggling. I think you could spend a week there and still not get around all the exhibits.

So, if you want to do this trip with a group of people with similar hobby interests, show your interest now, as I can tell you from personal experience, that Dayton alone is worthwhile. The other options are icing on the cake. Oh, and be aware of cigarette smoke, not to mention excessive RF from all the hand-helds operating at once!

You can write to Judicious Rex by mail care of the Editor, Radiomag, PO Box 123, Eagle Heights, QLD 4271, or by E-mail to [judicious@radiomag.com](mailto:judicious@radiomag.com)

R

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# THE 27MHz DXer

By **Jack Haden VK2GJH**

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Welcome to another month of DX news for the 11-metre band enthusiast; please note the new E-mail address which is effective immediately. Despite the odd periods of poor propagation, the band has performed reasonably well with some good openings to Europe, Africa and Latin America. A number of Australian DXers have reported picking up the odd new country or two out of Africa and the Middle East due to some DXpedition activity taking place during the northern hemisphere summer.

Considerable attention was directed towards the South Atlantic with many chasing after the Falkland Islands, South Georgia and Rodriguez Island operations. Although the signals were not all that brilliant in the Pacific for the most, a number of DXers with decent beams are reported to having made it through.

A turn up for the books was the appearance of Aves Island with Miguel signing as 280-SD/0 in late June. Quite a few people confused this operation with the Oman operation 180-SD/0 but after a day or so things became much clearer. During July Miguel also signed as 280-SD/NA-020 for the IOTA buffs and attracted some very big pile-ups.

## PAS DX Group

The PAS DX Group has a number of interesting DX stations on air until August 31. You may like to look for Argentina (4), Venezuela (5), Puerto Rico (11), Jamaica (23), Panama (24), Canary Islands (34), Guatemala (72), Cuba (88), St Lucia (143), Tunisia (147) and Croatia (328). QSL routes are varied.

## PIG 30 years

The Peace International DX Group will cracking the champagne as they celebrate their 30<sup>th</sup> anniversary over the weekend 1-2 September.

The group plans to have 30 special stations around the world active for the occasion. There's also a new QSL card to mark the beginning of co-operation between PIG and the Lima Delta DX Group, Dario 1-LD-131 has designed a special colour card to mark the event.

## Joe 13-SD-019/43

I received a very nice postcard from Joe 13-SD-019 posted in Darwin a few weeks back. Joe is currently travelling about Australia and, by all accounts, appears to be enjoying himself very much.

One of the highlights of the trip is the warm hospitality Joe has received, especially from Paul 43-IR-259 in Melbourne, Les 43-SD-136 and Stuart VK8NSB in the Northern Territory. I wonder how many Darwin stubbies Joe consumed whilst in the territory?

## World DX Forum

### Disclaimer:

*All times published are in the UTC/GMT format. QSL routes and IOTA designators are given where known. Information is derived from a number of sources in good faith and can possibly contain some inaccuracies and transcription errors beyond my control.*

## The Pacific

The North Cook Islands is scheduled for activity in the period 18 Oct to 1 Nov as 249-LD/OC-014. The operation will be conducted on Manihiki Atoll by Victor 250-LD-101 and should prove to be most popular.

The Federated States of Micronesia has been doing the rounds with Derrick 43-SD-108 linking up with Jaffy 230-AT-101 at 0325z the other day. Jaffy was a good 5x6 at the time. QSL via 19-AT-029.

Fiji should prove to be most popular with the lung busters over in the continent when 99-FAT/OC-016 appears on air around 1 Sep. This is an IOTA operation from the main island of Viti Levu. QSL to PO Box 63, Caudan-Cedex 56854, France.

Kiritimati Island (Christmas) was reported quite active with Tawita 266-SP-101 worked by a number of people during June. However, the elation was to be short lived as Abe 43-SP-101 said the "real" 266-SP-101 was off air due to problems with his solar power unit. So it's quite clear a slim has been doing the rounds generating excitement, especially with the Europeans. By the time you read this the real 266-SP-101 may be back on air.

The Mariana Islands isn't exactly rare DX in this part of the world but it certainly attracted considerable attention from the Europeans. Quite a frenzy had developed at 0902z with 133-FAT/OC-086 on Saipan dealing with quite a handful.

The Marshall Islands has been about with Val 132-SP-101 being mentioned in numerous dispatches of recent. At 0233z I heard Val a good 5x8 in Sydney; an hour or so later also heard 132-SD-104 also 5x8. Derrick 43-SD-108 reports Kinja 132-SD-103 also active at 2220z 5x5 report.

Norfolk Island always creates considerable interest in Europe with Peter 130-SP-101 and Kevin 130-SP-102 being reported from time to time. At 0955z I heard Peter a good 5x9 in Sydney amongst the hurly-burly of Western Europe. QSL to Abe 43-SP-101 with the usual trimmings (no callsigns or club stamps on the envelope).

Samoa is one of those semi-rare DXCC entities that appear from time to time to keep everyone on their toes. At 0044z 223-ED-01 was about the traps, however there were many questioning the authenticity of this operation. Work now and worry later is the only option at present.

The Solomon Islands raised considerable attention from the gang in Europe when Jimmy 135-SD-101 appeared on the band around 1000z the other day. Due to political problems, mainly on the main island Guadalcanal, there's been little activity from this country on 27MHz.

The South Cook Islands was about with Vic 250-LD-101 reported on 12 August from 2300z. Vic was operating from the main island, and capital, Rarotonga at the time. Vic was still about at 0921z working the hordes in Europe although he was not audible in Sydney at this time.

Western Kiribati came through loud and clear at 0312z with 224-TR-09 heard calling for Europe at the time. His signal was a very nice 5x8 peaking nine.



## Europe

**Belarus** has been about the traps with a number of people reporting activity from 317-VIP/0 in recent weeks. At 1010z it was a very weak 3x1 with Mark 43-ACT-01 with little chance of getting through at the time.

**Corsica** is again subject to some concentrated IOTA activity with 104-AT/TK-033 Pietracaggiosa Island from 25 Aug. On 9 Sep 104-AT/TK-003 Cavallo Island will commence activity. QSL both of these via PO Box 59, Asti AT 14100, Italy. Other activity in August was reported from 104-AT/TK-015 Pointe Sette Nave Island and 104-AT/TK-034 La Vacca Island, both are via the Asti address also.

**Estonia** was about in an IOTA capacity with Vello 304-AT-102/EU-149 doing brisk business with the IOTA community around 0900z the other evening.

**Guernsey** in the English Channel will be about with two stations on air, one signing as 169/14-AT-310, and the other as 169/14-AT498. Both will be active in the period 7-9 Sep only with cards going to Jacques at PO Box 3022, Angers-Cedex 01, 49017, France.

The **Isle of Man** should be around as you read this with 137-VIP/EU-116 scheduled from 31 July and closing after 1000 contacts are achieved. QSL to PO Box 94, Bialystok-2, Poland 15-959.

**Liechtenstein** proved to be a nice catch for Evan 43-EW-01 when he notched up a quick contact with a very busy 40-SD-010 around 0945z. The contact was kept very short and sweet due to a number of Asian and Pacific DXers also chasing a contact.

**Monaco** pushed the meter up to a good 5x7 when I noted 107-FAT/DX around 0820z the other day. At the time he was working a number of South-East Asian and Pacific stations.

The **Ukraine Republic** operated a special event station celebrating the visit of Pope John Paul to the country in June. Derrick 43-SD-108 worked the station signing as 315-XX/PJP at 0805z 4x1 report.

**Rhodes** will be about the DX traps as 59-AT/EU-001 Kos Island from 12 to 26 Sep inclusive. QSL to PO Box 101504, Koein 50455, Germany.

**San Marino** proved to be a very nice catch for Gil 43-GG-01 when he worked a very weak 36-RR/DX the other night. QSL to PO Box 43, Marlia 55014, Italy.

The **Vatican City** has been reported about the traps as 138-AT/0 during July. However, there were the usual questions about this one being the real thing or just a hoax job. As always, in this case, work it now and worry about the other details later.

## Africa & Indian Ocean

**Algeria** stirred a few into action with the debut of Rafy 146-DZ-103 around 0711z on August 12. Although the signal from Rafy was not all that brilliant in the Pacific there were a number of people chasing after a contact.

The QSL route is a little sketchy and not confirmed... what I have here is PO Box 64, Bis 16018, Algiers, Algeria. Personally, I would double-check this before sending.

The **Canary Islands** club station for the Alfa Tango group will be active with both 34-AT/000/NT and 34-AT/000/ST on for two days only during 25 and 26 August. QSL the "ST" operation to PO Box 16, San Miguel, Tenerife 38620, Canary Islands.

The "NT" operation goes to PO Box 203, La Oratava, Tenerife 38300, Canary Islands. Another to look for in the period 22 and 23 Sep is 34-AT/LM. QSL to PO Box 58, La Matanza, Tenerife 38370, Canary Islands.

**Ceuta & Melilla** created considerable interest with Manuel 106-SA/DX quite active in late June. At 0600z it was just audible with quite a number of Asian stations in hot pursuit. Allen 43-AR-09 reported it 3x2 at best one weekend around 0712z.

The **Comoros Islands** has been very active with Cheik 185-SD-101 heard on a number of occasions. At 0401z Cheik was a good 5x7 into Sydney but appeared to be occupied with some European stations at the time. Later, at 0655z, Simon 43-SS-204 managed to get through the European feeding frenzy exchanging a 5x5 report.

**Egypt** proved to be a very nice bonus for Simon 43-SS-204 on July 21 when he nabbed Richard 117/161-SD-035 around 0845z. Although Richard was having a battle on his hands trying to control the excited continentals, Simon managed to get through and exchange a 5x3 report.

The **Madeira Islands** attracted considerable attention from the Pacific with many chasing after 119-PAS/DX around 0545z. Although the signal was only 4x2 at best a number of Australian stations managed to make it through.

**Mali** proved to be a surprise for Allen 43-AR-09 at 0545z when he heard 216/77-AT-103 a poor 3x2 at best. Despite a number of calls Allen couldn't break the European monopoly and after 30 minutes conceded defeat. QSL via Mario 1-AT-157.

**Niger** burst through the noise at 0600z with Nick 245-SD/0 attracting quite a lot of attention from around the world. However, the elation proved to be very short-lived as a press release from Dino 1-SD-001 on Aug 13 stated this one was a slim.

**Reunion Island** came through a good 5x9 plus at 0400z with Frank 173-N-066 looking for French islands in the Pacific. At 0506z Mark 43-ACT-01 nabbed 173-RS/AF-016, an IOTA operation, a good 5x9 plus. QSL to PO Box 2, Cassagnes 12120, France.

**Swaziland** made an appearance on the band with Henry 191-AL-04 drawing considerable attention. Many asked if this one was a slim or not, who knows? Work it now and worry later!

**Zaire** has been reported by a number of contributors with 162-RS/0 noted in the early evenings. QSL to PO Box 7003, Genova 16148, Italy.

**Zimbabwe** pushed the meter well into the red at 0412z with Dean 85-SD-102 a solid 10dB over the nine the other Sunday. Dean is one of the more active stations from Zimbabwe and appears to be about most weekends.

## Asia/Middle East

**Armenia** proved to be a nice catch for Milo 43-MV-01 when he worked 301-SD-011 at 0600z. Milo said the going was very hard due to the "overflow" from 280-SD/0 operation working split frequency nearby.

**Asiatic Russia** has been about with Yuri 302-TRC-101 from Bratsk worked by Derrick 43-SD-108 at 0625z 5x5 report.

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**Bahrain** came on air for a limited time as Mussalam signed as 150/102-AT-114. Mussalam was in Bahrain on a holiday with the family and thus was not consistently on air. The equipment used was an RCI-2950 to an Antron-99 antenna. QSL to PO Box 1383, Fintas 51014, Kuwait.

**Kazakhstan** was about the other day with Derrick 43-SD-108 reporting Yako 308-TRC-021 at 0330z 4x2 report and Sergy 308-TRC-098 at 0335z 5x7. Sergy informed Derrick that he's running the "full ton" to a six-element beam at 35 metres.

**Oman** drew considerable attention with 180-SD/0 kept very busy with the pile-ups. As usual the problems with over excited Europeans added flavour to the operation keeping the operator on his toes. At 0502z Milo 43-MV-01 had 180-SD/0 a good 5x4 but couldn't get a look in either way due to the bedlam on the frequency, many of them Europeans confusing the 180 prefix with the 280-SD/0 operation also on air nearby!

**Taiwan** had the Europeans going full steam ahead with 155-GH-054 clearly having dire problems controlling a pile-up at 1045z. The Taiwanese station gave up in the end and simply went clear around 1118z.

**Thailand** has been very consistent on the band in recent weeks with Chai 153-RT-123 a good 5x8 at 0402z one Saturday. The other day I again noted Chai but this time he was calling as 153-AC/DX around 0847z working a throng of Europeans.

**Uzbekistan** by way of Victor 316-SD-101 was snapped up by Derrick 43-SD-108 the other day. At 0345z Victor was a just manageable 3x2 report. QSL via PO Box 4332, Tashkent 700000, Uzbekistan.

### Latin America/Caribbean

**Antigua & Barbuda** was noted a good 5x8 at 0020z with a number of Pacific stations in hot pursuit of 120-DR-101. However, by 0024z his signal was quite shaky and totally disappeared into the noise moments later.

**Aruba** burst through the noise at 2259z with Janchi 232-AT-111 a good 5x8 peaking nine. Being a weekday there weren't too many takers to his call and soon he disappeared elsewhere. QSL via PO Box 4307, Aruba, Dutch West Indies.

**Barbados** aroused quite a bit of interest in the Pacific with a good 5x9 signal from Philip 122-NDX-179 at 0046z.

The **Bahamas** made an appearance with 121-IR-391 reported around 0100z on 13 August, a fair 5x3 in eastern Australia. Quite a few in the Pacific were chasing after this one.

**Belize** presented a border line contact

with Derrick who tried to work Miguel 218-AT-106 at 0020z but the contact was lost due to fade. QSL via Jaime 49-AT-012.

The **Falkland Islands** attracted the hordes from Europe with Simon 198/26-SD-319 kept very busy in early July. At 0115z a couple of New Zealand stations were in hot pursuit although the signal from Simon was barely audible here.

**French Guiana** came through quite well at 2259z with Said 22-SD-010 a good 5x6 at the time.

**Grenada** pushed the meter well into the red at 2230z with Francis 195-AT-101 calling for the Pacific and Asia. Evan 43-EW-01 also reports activity from 195-SD/000 Club Station, which is reasonably active on most weekends, at 2348z it was a good 5x7 with Evan.

**Guantánamo Bay** created quite a disturbance when Antonello 82-AT/0 appeared on the band during late June. Massive pile-ups appeared with the usual disgusting behaviour to match, at times Antonello was buried under the unruly goings on. At 0012z I noted him a fair 4x4 report frantically trying to control over excited Europeans.

**Guyana** attracted some attention from the Pacific with Esmond 131-KP-101/SA-067 quite active the other day. At 0045z he was a good 5x4 with a number of people chasing after a contact.

**Honduras** came through quite well around 2330z with Brenda 28-WD/DX a good 5x7 peaking nine. Quite a number of hot-blooded males were heard in hot pursuit all vying for a contact with Brenda.

**Juan Fernandez Island** has been quite active with 286-SD-101 around the usual DX traps. At 0105z I heard some Americans in hot pursuit at the time, although the signal was only 3x3 at best here.

**Rodriguez Island** surprised many with the appearance of Peter 257-AS-002 at 2257z the other weekend. Many were suspicious of this being a slim but after a number of inquiries were made Peter proved to be the real thing. Peter was a good 5x5 in Sydney at the time. Just to be double sure of a good one, many worked Cyril as 257-SD/0 AF-017 or 257-SD/0 during July. QSL to PO Box 3, Cast 29150, France.

**Saint Lucia** came through very well at 2234z with Neil 143-SD-010 a good 5x6 peaking 5x9 at times. A number of stations in the Pacific were noted in hot pursuit at the time.

**Saint Martin** in the French West Indies was doing brisk business with the Pacific at 2209z. Franklin 207-SD-101 had a number of stations after a contact and seemed to be enjoying himself.

**South Georgia** threw the cat amongst the proverbial pigeons with Simon 289/26-SD-319 proving to be very much in demand. Although his signal was just readable in Australia there were quite a number about trying their luck, with little success. At 0012z his signal was 4x3 at the very best subject to fade and the usual nonsense from people calling when it was clear that they couldn't hear him anyway!

**Suriname** has been very active with Ramon 73-R-357 heard about the traps on a number of occasions. At 2345z Ramon was a good 5x8 in Sydney, with Berto 73-SD-102 also active just a few channels away 5x7 at 2358z.

**Trinidad & Tobago** attracted quite a lot of attention with a good 5x8 signal from Ronald 158-SD-102 heard at 2333z. Also noted was 158-SD/SA-011 at 0015z doing brisk trade with the IOTA community. QSL to PO Box 5, Workington CA14-1GF, Cumbria, England.

### Future activity...

**Aland Island** 212-SD/DX soon, **Albania** 251-FGB/0 soon, **Angola** 39-RS/0 soon, **Belau** (Palau) 134-SD/0 1-31 Dec, **Bermuda** 123/35-AT-130 Mar to Nov inclusive, **Cape Verde Islands** 205-SD/DX 22 Oct to 1 Nov, **Eastern Kiribati** 266-IR/0 Feb/Mar 2002, **Guernsey Island** 169-AT/EU-114 7-9 Sep, **Italy** 1-SA/AF-19 Lampedusa Is (IOTA) 4-16 Sep, **Japan** 25-SD/AS-008 Oshima Island soon, 25-SD/AS-017 Okinawa Island soon, **Macedonia** 332-FGB/0 soon, **North Cook Is** 249/13-IR-102 8 Nov to 8 Dec, **Rotuma** 325-TD/DX soon, 325-WD/DX soon, **San Andres/Providencia Island** 81-SD/NA-033 soon, **Singapore** 98-SD/0 5-20 Dec, **St Kitts & Nevis** 283-DT/0 soon, **South Cook Is** 250/13-IR-102 2 Oct to 7 Nov, 250-SD/0 13-27 Nov, **Ukraine** 315-WD/DX soon, **Western Sahara** 300-IR/0 soon.

### Epilogue...

A very productive month it's been. As usual, special thanks go to the following contributors for sharing their news with us: Simon 43-SS-204, Derrick 43-SD-108, Milo 43-MV-01, Ian 43-PIG-099, Gavin 43/26-GB-102, Allen 43-AR-09, Peter 43-FP-103, Mark 43-ACT-01 and Evan 43-EW-01.

Reports can be sent via E-mail to [27dx@radiomag.com](mailto:27dx@radiomag.com) or by post to PO Box 299, Ryde NSW 1680. You must send a SAE and 45 cent stamp for a personal reply. Catch you all next month...

73 de Jack.

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# 27MHz Viewpoint

## QSLing the DX

By Jack Haden VK2GJH

The subject of QSLing on 27MHz has always been a most controversial topic; it flares up on a regular basis with many different viewpoints put forward. These days most DXers are becoming wise when it comes to sending out QSL cards. In the past people used to QSL just for the sake of collecting various cards and little more.

Established DXers find that QSLing can be a very expensive exercise, in some cases, for little return. Many have adopted the practice of only sending out a card when a new DXCC entity has been worked which makes good economic sense. DXCC QSLing is the main pursuit of most 27MHz operators followed by the IOTA program, special events and other whatnot rate very low down the scale.

However, that doesn't stop people from working a DXpedition station for the sake of it even though they have the country already confirmed and have no intention of sending a card to the operation just worked. This has come to the attention of the DXpedition operator who sees masses of contacts in the logs but little in the way of QSL exchange being conducted.

Let's have a look at the other side of the coin and see what the DXpedition people, and QSL managers, have to say when it comes to dealing with the QSLing.

Dave 26-AT-356 operated from Barbados in the Caribbean and made some observations. "My visit to Barbados saw me give out 1000 progressive numbers and I received 921 QSL requests to date. Many are still arriving well after the event. I bet that the people operating from 281, 272, 252, 151, 149 and 203 etc will receive a high percentage for the reason that most people don't already have them in their collections. These are my personal opinions and not directed at anyone in particular."

Reflecting back to the last *27MHz Viewpoint* where special non-DX callsigns (SES, IWI etc.) were being

challenged, this comes from Parcifal 19-AT-046 who had these comments. "I know from my last activations that the replies are bad, only about 54% replied for my 56-AT/LL operation. While the location where I was transmitting is quite rare only a few DX people bothered. Simply, if you don't wish to QSL then don't bother to call and give others a chance. Currently some 55% have QSLed my 21-AT/EU-043 operation, which is a little better. For a test I did try to contact some people from the log that had not QSLed with me and asked them in a friendly manner if they sent a card or not. I was most surprised with some of the replies, very bad words like "I don't want your QSL" amongst other rude comments."

Rob 19-SD-777 had some interesting comments too. "I still have my log open for 147-SD/DX for some 600 contacts. At the end of July I plan to operate as 64-SD/0 and request that you not call if you have no interest in sending a QSL card. I see many activations that make 2000 contacts but receive only half that in QSL requests, why do they make the contact if they have no intention of sending a QSL?"

Dieter 13-DP-102 operated some time back from Western Kiribati and made these observations. "It cost me a lot of money to fly from Germany to Western Kiribati, then pay for accommodation and other expenses, including printing costs for my QSL cards. I was astounded to find that despite the fact I made 1500 contacts only 635 requests were received. Out of this lot roughly half only bothered to send me some form of return postage (IRC or greenstamp) and a self-addressed envelope resulting in my being out of pocket even further. I think in my mind that the majority of stations who worked me already had 224 prefix confirmed and just called for the sake of it or just show off to friends on the Internet with their

postings? I worked 65 Australian and New Zealand stations too but to date only received nine QSL requests, 224 is an easy contact for these people so I assume they called me just for the fun of it with no intention of sending a QSL? Out of those nine who did send only two bothered to send return postage and a SAE, a very poor situation. Likewise my QSL return from Europe is very poor which suggests most that worked me didn't need it either. What really annoys me is those who send for a QSL card but are not in the log, or the others who want to swap a QSL card for a "collection" with no contact ever taking place!"

Abe 43-SP-001 knows the ins and outs of QSLing being a manager for a number of DX calls; here's what Abe had to say. "What annoys me is the people who "splash" callsigns and group names (seven out of 10 items received) over incoming mail, many other QSL managers have expressed dismay also at this practice. I have now initiated a system where mail is received with callsigns or other 11m related writing is returned to sender. Also only five out of 10 people bother to send an SAE with their request (so I have to purchase envelopes on a regular basis), things are a little better with eight out of 10 sending return postage. One of the biggest hassles is people bailing me up on air asking about QSL cards, but the positive side is that I enjoy giving a station a new DXCC entity. People should be more patient and understand that things take time and expense! It costs me between \$500-700 for 1500 decent QSL cards from the printers not to mention the time spent processing cards, checking the logs etc. I believe many QSL managers get attacked on the hard job they have, how much do we have to put up with? Please try a little respect and tolerance.

So there we are, the bottom line is, if you have it confirmed already then why bother working it again — unless of course, you are going to send a QSL for the contact? The importance of sending sufficient return postage and a self-addressed envelope is also raised, not to mention the "no callsigns" or club stamps on the envelope policy favoured by many. So there we are, another rather touchy subject covered.

73 de Jack.

R



Once upon a time, not long ago, I paid a visit to a very sick computer. It had a case of terminal constipation. When I arrived the computer's 500 megabyte hard drive was loaded to within ten megabytes of "disk full". So I went through my usual laxative procedures for computers — flushing away temporary files, caches, and anything else that appeared to no longer have any function.

This reclaimed about 40 megabytes of disk space, not nearly enough to do much good. Someone along the line of previous owners had installed the latest and greatest version of Microsoft Internet Explorer, which would hardly run at all in such a restricted computer. So I disabled Internet Explorer and replaced it with the little Opera browser. If the computer survived all right with Explorer disabled, then I'd come back in a few days and properly remove it.

Next visit — the computer still working, but very sluggish. So it was time to give Explorer the flick by deleting its home directory. The "delete" command produced lots of disk spinning for three or four minutes. When everything settled down I looked at disk space again, to discover that there were 270 megabytes free that weren't there a few minutes ago. It seemed that Internet Explorer had been busy gathering little treasures into its home directory for reasons unknown. Just like a bower bird — if something is lying there, better grab it.

But 270 megabytes? Golly! I never got to discover what was in that directory, but the computer sure came to life once it was removed. After a quick defragmenting job on the hard disk, the owner declared the computer "better than new".

My question is: why does supposedly well-designed software allow this to happen? Surely after doing its intended job it could put its tools away and throw out the scrap. But not good old Internet Explorer. During government hearings a couple of years ago, Microsoft swore up and down that Windows couldn't run unless Explorer were present. But experience has proved that Windows runs just fine without it — better, in fact, more stable and bug-free.

So now it is my common practice to suggest that Explorer be tossed and replaced with either Opera or Netscape. But now Netscape has joined the Bloat Brigade too. Earlier versions aren't so bad, and I sometimes install Netscape 4.08 when computer users say they don't trust a browser (Opera) they've never heard of.

Several times in the past I've spoken of Opera in *Moffat's Madhouse*. On the screen it looks like anybody else's browser, but inside it's tiny, and it stays that way. A bare-bones Opera can live in a couple of megabytes. My version, with Java crammed in alongside, takes about seven megs. The latest Internet Explorer occupies more than a hundred. This is all well and good if you have a brand new computer with 80 gigabytes of hard disk, but

most of us ham types make do with elderly computers that nobody else wants. And these machines are where Opera shines.

I have a computer made entirely of scrapped parts, zero cost, running Windows 3.11 on one hard drive and Linux on another. Win3.11 was the last and greatest of that version; it runs with reasonable speed, it's very stable, and it's small. To this very day, much ham-related software is written for Win3.1, six years after it officially "died". I have stuff like transceiver-control programs and a snazzy weatherfax decoder, all written recently for Windows 3.1. Along with Opera, of course, and that fine old Tasmanian product Trumpet Winsock to connect it all to the internet.

Opera seems to be designed for many markets. The technically proficient (like you readers) can configure it to work just about any way you want as to handling of windows graphics, sound, etc. There is the usual Properties menu on the browser itself, but users are also encouraged to go behind the scenes and hack away at the opera.ini file to change things more directly.

Fooling about with Opera is mostly on a trial-and-error basis, but so many people are indulging that there is an Opera news server (news.opera.com) containing several technical newsgroups where Opera freaks can compare notes. Sometimes the notes turn into heated arguments about the best way to do this or that, but the motivation is always the same: make the software run even better than it was intended to run.

Back in the Netscape browser's formative years, when people were still paying money for it, the program came with a big fat book which went into the finest detail about setting up and using the software. There was the Netscape 2 book, and the Netscape 3 book, but after that Netscape became a free download. But nobody was keen to give away free books, so users were pretty much back to flying blind.

Opera, from the very earliest days, has been a pay-for product. It runs for a certain number of days and then stops, only allowing access to the Opera web site which then suggests you pay up. Somewhat surprisingly, users seem ready and willing to cough up \$30 or \$40 for Opera, despite the fact that the two biggies are free. The latest Opera 5 version lets you use it for free indefinitely, in return for plastering advertising on your screen. Pay up and the ads go away.

Opera seems to have jumped on the feature-bloat bandwagon, and the latest versions have most of the functionality of an Explorer or Navigator, while remaining less than a two megabyte download. And nearly every feature in Opera is user configurable. If you multiply the number of features times the number of options for each one, you suddenly have a very complex state of affairs.

So it was just in time that a big fat book

hit the market, devoted entirely to Opera and all its many tricks. It's called, appropriately enough, "The Opera 5.x Book", written by JS Lyster and published by No Starch Press. I wonder if Lyster is the same guy who was in the Red Dwarf TV series. He was a pretty clever fellow too.

The "5.x" refers to the various releases of Opera 5 which have been kicking around since early this year. Opera now has its own e-mail client (users formerly relied on something like Eudora) and other goodies such as an instant messenger gadget like ICQ or the AOL messenger. But as Opera has grown, so have supplementary functions supplied as plugins — the code sits in a special area of the browser directory, waiting to spring into action if content of a web page demands it.

The most important plugin of all is the Java language. You may have heard me rage about this before, claiming that Java is an unnecessary frill mostly used to supply advertising. I even suggested the establishment of an Anti-Java League. But progress has overcome us at last, and a non-Javafied browser is often useless, even on some education and government sites.

In the development of Opera, there was a very important milestone with the release of Opera 3.62. Many of us feel that was the best, if not latest version. Beyond that, in versions 4 and 5, complexity increased along with its attendant bugginess. It's like cars — for instance it's pretty much agreed that the very best Chevrolet was made in 1957, and it's been downhill ever since.

So I've been sticking with Opera 3.62 for a couple of years at least. I finally decided to add Java, mostly using newsgroup suggestions along with some personal hacking. Java's now in there, and (I'll have to admit), it's working pretty damn well. So now I have an Opera 5 book but an Opera 3.62 browser. All is lost? Certainly not. Opera 3.62 makes an appearance in Chapter 19, describing its use with obsolete operating systems like Windows 3.1.

Like so many computer books nowadays, The Opera 5.x Book comes with a CD stashed within. This is a real smorgasbord (after all, Opera comes from Scandinavia). There are versions of Opera for many operating systems such as BeOS, Epoc, Linux, and the various Windows versions. Opera 5.2 is the main version supplied. There is also Opera 3.62, the 16-bit version for Windows 3.1 users.

I've also supplied the Windows 9x version of Opera 3.62 for placement on the Radiomag web site for you to download. It's highly recommended and will cost you \$US35 to register. Worth every cent, I say!

The CD also contains just about every Opera plugin mentioned in the book, including two versions of Java. Some of the software on the CD handles functions I've never even heard of. So if I get adventurous with that CD, who knows what infinite joys may spring forth! **R**



# Simple Modification...

## Add Memory Function To DTMF Dialler

By Tim Jensen, VK2ETJ

Recently there has been a resurgence of interest in amateurs utilising DTMF signalling over both 2m and 70cm, especially in relation to establishing remote Internet links via amateur radio. IRLP and iLINK are two examples of these Internet-linked modes requiring DTMF that can be accessed through the repeaters maintained by the Manly Warringah Radio Society (<http://www.qsl.net/vk2mb>).

In-built DTMF functionality is nowadays supplied as a standard feature with modern amateur transceivers made by the major manufacturers. But what do you do if you own an older-style radio without DTMF? One option is to purchase a stand-alone "DTMF Dialler". These were originally produced to allow telephone answering machines, telephone banking facilities, etc to be accessed via a remote (pulse dialling) telephone. The DTMF diallers consist of a small box that is placed over the telephone's handpiece and generates the appropriate DTMF tones when its keypad is pressed.

Currently, Tandy Electronics advertises a basic DTMF dialler on special (catalogue number 430 0139 for only \$2.95!), and a number of us in the Manly Warringah Radio Society purchased one. This dialler has a 4X3 keypad and generates the popular DTMF tones, however it does NOT have a memory function. A memory function is sometimes useful for "one button recalling" a sequence of numbers previously dialled in a string of digits. I began to wonder whether this dialler utilised an IC that did in fact contain a memory function, only the feature was not wired out to the keypad (a common ploy in the industry to differentiate a company's high tier products (to be sold at a premium)).

I opened my dialler and found that the IC used was a UM91215A. A search of the Internet turned up a data sheet for a NT91215A (<http://www.teleic.com/pdf/91215A.pdf>).

I considered that the number was close enough; it was probably an identical IC produced under licence by a different manufacturer.

The datasheet shows that this IC can be used with a 4X4 keypad (recall that Tandy had supplied a 4X3 keypad). This leaves four additional keys not wired out, and one of these (unused) keys is for a memory function! It also shows that it should be a simple matter of inserting a momentary pushbutton switch between pin 16 of the UM91215A and negative supply to activate an internal 32-digit memory. (Note: the other three "unused" keys are not particularly useful; Flash key break for 96ms, Flash key break for 640ms, and Pause for 2.2 second).

**Front of the Dialler. The miniature switch we've added is visible directly above the "2" button.**



vate an internal 32-digit memory. (Note: the other three "unused" keys are not particularly useful; Flash key break for 96ms, Flash key break for 640ms, and Pause for 2.2 second).

A quick rummage in my junk box turned up a really small momentary pushbutton switch (about 3mm by 3mm) that I had previously scavenged off an old PC motherboard. (The junk box to the rescue yet again!).

I carefully removed the dialler's PC board and drilled a small hole in the plastic case of the dialler just large enough to allow the button of the switch to move freely through it.

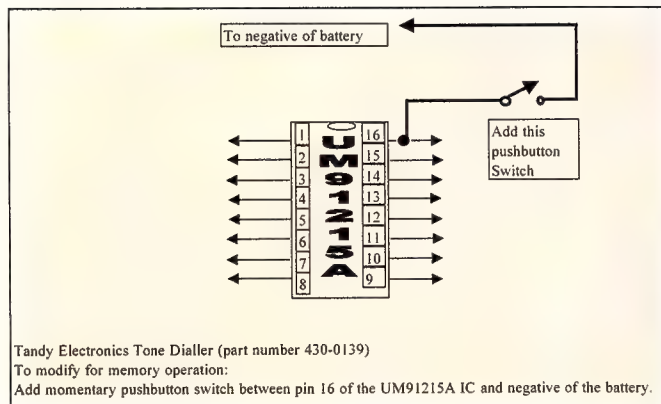
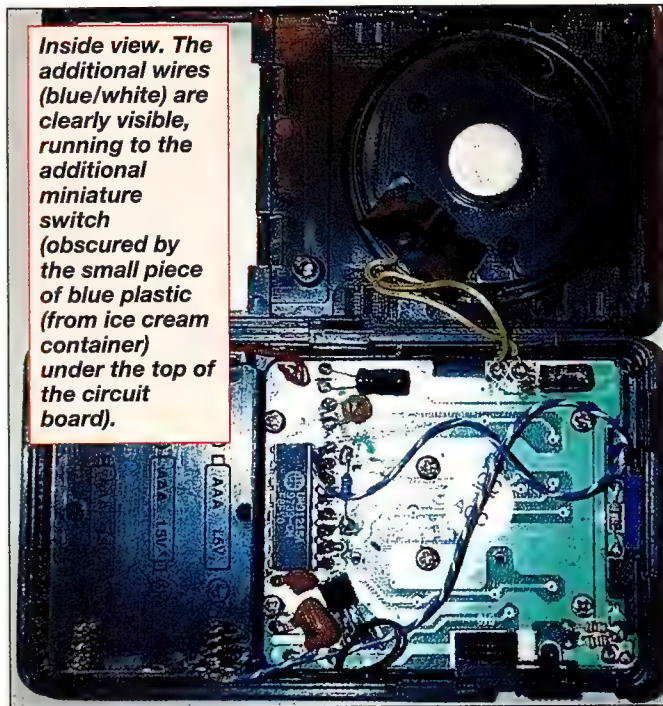
I then soldered two fine (insulated) wires to the switch; one wire I soldered to pin 16 of the IC, the other wire I soldered to the negative of the battery.

Next, I cut a small piece of plastic out of an old ice cream container, and then placed the switch so its button protruded out of the drilled hole. I held the switch in place by placing the cut plastic over the top of it, and then held the lot securely in place by screwing the PC board back over the top of the complete assembly.

How does the modification work? Just like a bought one! After keying a sequence of digits into the dialler, a single press of this additional button will (after a delay just long enough to place the dialler over the radio's microphone) transmit the sequence of digits as one concatenated string. It must be remembered that if a string longer than 32 digits is entered, the memory will be filled, and the dialler must be momentarily switched off to clear the memory.

**R**

**Inside view. The additional wires (blue/white) are clearly visible, running to the additional miniature switch (obscured by the small piece of blue plastic from ice cream container) under the top of the circuit board).**





# Handy power... tough as nails!

By Ron Bertrand, VK2DQ

**I**t was with a personal interest that I offered to review the VX-150. I have been considering purchasing a new hand-held for some time now. I was almost going to go for the VX-5R. I haven't because I really only wanted two metre operation (I think). See, I am *still* procrastinating! On price, the VX-150 is a clear leader. The only decision really is whether I (or you) want a monobander. Right now my answer is "yes" and I suspect this will be my final decision after a doing a bit of the usual swaying to and fro with the thought processes.

The VX-150 is a very compact (but by no means too small) FM hand-held transceiver. It produces five watts of output power on the 'high power' setting. You really must have at least the ability to produce a full five watts on a hand-held in my view. It is sensible of course to run lower power settings when you can get away with it.

The radio just feels good in the hand – my hand anyway. It's not as chubby (read thick) as some of the other transceivers I have tried. It's also light, weighing in at 325 grams with the supplied battery pack and antenna. It looks, feels and *really* is rugged. At first I thought the entire radio was in a diecast aluminium chassis. It's not always easy to tell with some of the incredibly strong and high impact plastics these days. The frame and rear of the radio is diecast aluminium. The front is extremely hard plastic. I had a difficult time determining this — take this last comment as a positive. To be sure I opened the transceiver and pin-pricked the front panel. Extremely tough, it looks and feels almost like metal, but plastic it is.

Yaesu says it has installed rubber gaskets and seals around all external knobs and connectors to help keep out dust and water mist. I was able to confirm this. I pulled the two knobs off the top and, yes, there are soft rubber gaskets around each shaft. There are tight-fitting rubber bungs in all external sockets. Removing the battery pack reveals a very good rubber seal right round its perimeter. I'll score the radio a couple more points for the care taken here.

The unit will transmit from 144 to 148 MHz and receive across the range 140-

174 MHz in steps of 5, 10, 12.5, 20, 25 or 50 kHz. The receiver will band scan, sub band scan or memory scan. The receiver after "stop on busy" can be set to 'HOLD' (don't resume scanning), 'BUSY' (resume when no signal), or '5SEC' resume in five seconds.

Something I like very much is having two control knobs. One is a power/volume control and the other is the tuner knob with a ring at the base to control the squelch. A 'knob' is much better than volume buttons. The mute can be opened by the push of a well-placed button just below the PTT (push to talk).

The keypad has 16 multifunction keys. There are 199 memories and two VFOs. Along with the frequency the memories can store repeater shifts or separate TX/RX frequencies, CTCSS or DCS codes. There is also a 'home' channel and ten special-purpose memories for limited sub-band scanning. Priority channel monitoring is very useful. Memories can be alphanumerically labelled — this too is nice. ARS (automatic repeater shift) occurs in repeater sub-bands if you want it, and can be overridden even if set on.

The keypad serves as a DTMF encoder during transmission. This really is handy, particularly with the great interest in IRLP (Internet repeater linking) of late. DTMF consists of sets of dual audio tones that many transceivers use to modulate the carrier. When the tones are received they can be decoded and result used for many control process such as telling the recipient IRLP software which IRLP node (repeater) you wish to connect to. I tested the keypad with IRLP and no problems. There are nine DTMF memories that can be used to store up to 16 tones each for quick playback.

The liquid crystal display (LCD) has seven digits and shows things like memory selection, offset in use, CTCSS tone frequency and just about everything else. It does have a bar graph of signal strength and power out. Since the radio has three power settings (5, 2, 0.5W) you can tend to forget which one you are on (or is this just me?) but a quick glance at

## YAESU VX-150





the length of the bar graph tells you where you're at power wise. The LCD does show "low" for 0.5 and 2 watts but for me this was a bit hard to see. The bar graph is easier.

What I really like about the display is that it's laid back at an angle of 45 degrees. This means you don't have to hold the radio up and in front of your face or tilt it backwards to read the display. Simple things like this make a big difference over time (another bonus point). This display and keyboard have a very warm orange-coloured back light. The backlight can be operated by a single push button on the side or it can be set to come on with any keypress or at receiver scan stop. It can be toggled ON and OFF or go OFF automatically in five seconds.

Like all recent Yaesu VHF/UHF rigs, this radio can also work in ARTS (Automatic Range Transponder System) mode. ARTS uses DSC signalling to inform you when another ARTS-equipped station with the same tone settings is within communications range. There is an audible alert option and in-range out-of-range messages are displayed on the LCD. The radio can send your Callsign as a CW identifier. I have never used ARTS on any radio – does anyone use it?

There are a few features of this radio that I found particularly useful. Firstly, I really made good use of Busy Channel Lock Out (BCLO). There were a few occasions where I allowed the radio to be used by unlicensed persons with little radio experience. You know what it's like! This ain't full duplex like the phone, mate! BCLO prevents the radio from transmitting in the presence of a received signal. For newbies to repeater operation this meant I did not have to be so vigilant about the students 'doubling'.

Of similar use is the time-out-timer (TOT). The TOT limits the length of the transmission to a pre-programmed maximum duration. The timer can be set to 2.5, 5, or 10 minutes.

Battery life and remaining charge is for me an ongoing annoyance with portable radio equipment. The best solution is to have a spare battery pack. Mobile phones are notorious for going flat at the wrong time. Like some top mobile phones, the VX-150 allows you to display the battery voltage on the LCD. Of course you do have to transmit and view the minimum voltage *under load* but at least you can get an idea of the remaining charge, albeit a rough estimate.

### Advanced power saving features

The **Receive Battery Saver** "puts the radio to sleep" for a time interval, periodically "waking it up" to check for activity. If the channel to which you are tuned is active then the VX-150 will remain "awake" or "active". If the channel goes quiet the radio will start taking periodic naps. You can set the durations of these naps to between 200 milliseconds in five increments up to two seconds. The feature significantly reduces standby current drain. When operating in packet mode this feature needs to be turned off.

Now this bit is nifty. The **Transmit Battery Saver** automatically lowers the output power when the last received signal was very strong. This automatic selection of lower power conserves battery drain significantly. Of course, the radio is 'presuming' you are going to respond to the last signal.

Specifications VX-150	
Frequency coverage (MHz)	144 to 147.995 Tx 140 to 174 Rx only
Channel Steps	5, 10, 12.5, 20, 25 & 50 kHz
Standard repeater shift	600 kHz
Emission Type	G3E (Narrow FM)
Supply voltage	6.0 to 16.0 VDC
Current consumption	Receive 130mA Transmit (HIGH SW) 1.3A (MID 2W) 800 mA (LOW 0.5W) 500 mA Auto Power off: 8 mA
Antenna (SMA jack)	YHA-62 rubber flex antenna
Size (WHD)	58(W) x 108.5(H) x 26.5(D) mm
Weight	325g w/FNB-64 & antenna
<b>RECEIVER</b>	
Circuit type	Double-conversion superheterodyne
Sensitivity (for 12dB SINAD)	better than 0.16 $\mu$ V
Adjacent channel selectivity	70 dB
Intermodulation	70 dB
Audio output	0.4W @ 8 Ohms for 10% THD
<b>TRANSMITTER</b>	
Power output	5 W @ 7.2V & 13.8V EXT DC IN
Frequency stability	better than $\pm 5$ ppm
Modulation system	variable reactance
Maximum deviation	$\pm 5$ kHz
Spurious emissions	better than 60dBc
Audio Distortion @ 1 kHz	less than 5% w/3 kHz deviation
Microphone type	2-kilohm condenser

If that signal was another nearby HT user, then there's no problem. However, if you were doing a round robin in a group or some such similar situation you may want to disable this feature. The default on this and other power saving features is "OFF".

You can even disable the **BUSY-RX/TX LED**. I couldn't imagine this conserving much power, but why not?

**Automatic Power Off (APO)** is another nice touch. The APO conserves battery life by automatically turning the radio off after a user-defined period of time within which there has been no dial or keyboard activity. The available periods for APO are 0.5/1/3/5/8 hours. This feature is "OFF" by default. When the time is almost up the radio produces a musical jingle. If there is no intervention by the user the unit powers down (8mA battery drain) and shows 'APO' on the LCD. To activate the radio again it must be turned OFF and back ON. I like it, but a keyboard keypress wakeup would be more likeable still. (You get one minute after the beeping warning tone before it shuts off. If you hit any key during that minute, it resets the shut down timer! Ed.)

The radio came with an antenna, battery charger and the FNB-64 NiCd 7.2V 700mAh battery pack. The battery pack supplied is a constant voltage source (approx 12V). At first I thought this was a bit odd. It is not usual to charge NiCds from a constant voltage source, though it is done to save costs particularly with many rechargeable power tools. On looking at the schematic (thanks again Yaesu!) I found the radio has onboard current limiting and regulation for the NiCd pack.

Speaking of charging, this is where I found the only annoyance. It would be so easy to have an indicator lamp either in the charger or the radio itself to let you know that it was 'on charge'. If I end up buying one of these transceivers I will add this simple mod myself to the charger (not the radio).

The connector for the antenna is an 'SMA' type. This is the right choice for the aesthetics of the radio, but is not so good if you want to connect test gear or an external antenna. It is not hard to obtain an SMA to BNC adaptor, and one is available as an optional extra.

Other options available include an external speaker/microphone, 1100mAh battery pack, various chargers and DC cables.

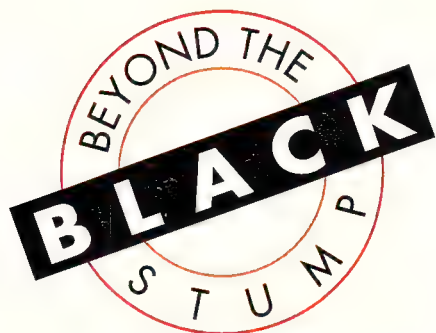
I was able to verify most (but not all) of the specifications 'off air'. Sensitivity and selectivity (at  $\pm 25$  kHz) were measured as being within the range specified by Yaesu. Intermodulation rejection had to be 'evaluated' rather than measured, and it appeared to be well within acceptable limits. The transmitter's spectral purity was measured down to -60dBc (dB below carrier) and found to be clean and stable.

For what it's worth, the subjective 'on air' tests were good. It seems impossible to over-deviate the radio. The internal speaker is adequate and as expected from a good quality hand-held. It sounds as good as the best and better than many. You can turn the receiver volume up until the audio output begins to distort. I prefer this to the manufacturer limiting the audio output.

I haven't had much to say on the negative side about this radio. The Yaesu VX-150 is great value and a real performer with many *useful* features. It gets a big tick from me. That's the way I see it.

R





By Steve Johnston  
E-mail: vks737@radiomag.com

# Beyond the Black Stump

Well, folks, here we go again! It seems that our Editor has managed to get one up on me again. As usual I thought he might get upset when I missed out on an article for the August issue. Not Chris — he just didn't *publish* the August issue!!!

Seriously though, by now you would have read about *Radiomag* taking over *Radio and Communications* and merging the two titles. Of course, the non-publication of the August *Radiomag* had nothing to do with me missing the deadline... rather it was to bring it in line with the old R&C issue dates.

Anyway, welcome on board to the readers and contributors from R&C. We are looking forward to a greatly enhanced magazine with lots of interesting reading for four wheel drivers, amateurs, CBers, vintage enthusiasts (that's enthusiasts of vintage equipment, not necessarily vintage in age!) and professional radio users alike.

This month we have quite a mixed bag for you, quite a lot of it being non-radio — but then, who wants to read about nothing but radio?

We quite often hear about disruptions to telephone services around the place, but the following takes the cake. Chris Gee (my sister-in-law) works for the Salvation Army in Papua-New Guinea as a Project Coordinator in Port Moresby. Up there the things that we take for granted, such as a regular supply of electricity and telephones, are almost a luxury (come to think of it, since the privatisation of the electricity supply in South Australia, a continuous supply has become a bit of a luxury here as well!). Apparently, at times she can only have one fluorescent light on in her house at any one time, after that the voltage falls so low that the starters on the other fluorescents fail to ignite the tubes. Microwave ovens do not work too well under these conditions either.

On many occasions I have tried to ring Chris to be greeted with a recorded message that the service is not available, but on one occasion the reason for the failure was quite astounding.

The telephone cables up there seem to be literally thrown out along the ground, or in the trees depending upon the mood of the installer at the time, and on this occasion the telephones to the office suddenly stopped working.



The fault was traced to the fact that a one metre section of the cable was missing out by the front fence. Why would one metre of cable disappear? Maybe the cable shrunk and broke — highly unlikely, since the cable had been cut.

How to fix the problem? It is simple, as Chris describes: "We actually did the repairs ourselves as Telekom (that's how they spell it in PNG, it's not my bad spelling) would have taken weeks to respond. Our driver climbed the tree and our Program Officer joined the wires — we are getting quite good at our own repairs these days."

"I had to wait six months for my phone at home to be relocated when I moved, even though the wires were all in place, and that was just for the inspection and reactivating of the line."

"When I inquired at one stage (after five months of waiting) I was told the contractor had 350 jobs on his list and mine was still 35th in line. The next time I inquired I was told the job had been given to another contractor as the first one had been given the sack for doing no work for about a year but still getting his pay. I think my inquiry blew his little game."

Unfortunately, in a climate where the humidity generally tries to exceed 100 per cent, these types of connections are not guaranteed to be long-lasting — but that's another story!

Anyway, back to the mystery of the missing one metre section of cable. It seems that the local bus was passing by and the number plate fell off the bus. The bus driver obviously needed to make some quick repairs to reattach the plate and the nearest thing that was available was the telephone cable. It couldn't happen in Australia, could it?

I was recently looking back over some of my articles which have appeared in *Radiomag* and *R&C* over the past couple of years. It was interesting to note that in June last year, **Ken Metcalfe**, the operator of the VKS-737 Base in Alice Springs, had made 20,000 contacts with members travelling in the Outback.

At the time of writing this article Ken has just doubled that figure and made his 40,000th contact — so who says that HF is dead? 20,000 contacts in one year says it all!

Speaking of the Alice Springs Base, Ken has just been given a \$3000 grant from the Northern Territory Government for the installation of a set of solar panels to charge up the battery bank, and hence reduce our dependence on the mains supply (which, unfortunately, can be rather erratic at times up there). The award was presented by MA Reed, the Deputy Chief Minister and Treasurer of the Northern Territory.



***This is Maurice Kirk's 'Cub', a vintage WWII spotter aircraft competing in the London to Sydney Air Race... Low on light, he decided discretion was the better part of valour.***



### **And now for something completely different!**

From time to time we receive some articles from members which would do justice to a true Monty Python script, as can be seen in the following that we received from Wally & Marie, otherwise known as VKS-737 November 1543:

"On Monday, April 2, 2001, we had travelled from Darwin to a rest area at Attack Creek approximately 50km north of the Threeways Roadhouse on the Stuart Highway.

"It was approx 6:15pm, the evening meal was on the stove, and daylight was fading, when a single-engined aircraft started circling the area very low — so low that the pilot was clearly visible. He flew along the Stuart Highway about 2m above the bitumen; my wife reckoned he could smell the cooking. He circled once more, and then dropped down on the bitumen.

"More luck than class there was no traffic, he spun the little plane around on the road and headed into the rest area, and parked very close to us. He switched off the engine, and when the dust cleared my wife went across to the plane to inquire if the pilot was okay. A conversation started, and they actually seemed to understand each other (no wonder, they're both Poms!).

"From this conversation we learned he was in the London to Sydney Air Race, and had run out of daylight to get him to Alice Springs. The plane was very small, a World War II spotter called a "Cub", the cockpit was very crowded with extra fuel, which he pumped into the plane's main tank with a hand pump.

"His radio was a GME Electraphone UHF CB. The pilot's name was Maurice Kirk, a Veterinary Surgeon from Wales in the UK piloting the slowest plane in the race (this was no surprise considering the plane was loaded down with additional fuel).

"Now, our flying vet had a more urgent problem — he needed to get a message to the race organisers to inform them he was okay and avert an air search. Have no fear, other caravaners who had stopped in the same rest area had a mobile phone, they could call the police, or the RFDS, and get a message through. But we were not on the coastal fringe of this big country, rather we were closer to the centre, in fact the Red Centre. Problem? No signal, of course!

"We said to our flying vet we could make a call to the VKS-737 base in Alice Springs.

"Question: Give me a phone number.

"Answer: Negative, did not know.

"Question: Give me a name of one of the organisers.

"Answer: Negative, did not know.

"Question: Give me the name of the hotel they would be in.

"Answer: Negative, Plaza or something....

"Now, with not a lot to go on with, we made a Selcall to VKS737 Alice Springs Base to which we had been listening to the voice schedules, and made contact with Ken Metcalfe. Now if anyone could organise a way out of a problem in Alice Springs, this was surely the man!

***The smiles all round probably mean this photo was taken after the aircraft had dropped supplies to the stranded motorists. To find out why they were stranded, turn the page...***



"I explained the problem to Ken, and I had the feeling he thought I was having him on, he asked me to "Say again!!!" I did, and he came back "You say a plane landed on the Stuart Highway, and just parked itself in the rest area?". My cryptic reply was "affirmative".

"After a lengthy pause, Ken came back and said it was not too much to go on, but he would phone around the hotels in town, and see if he could contact the organisers, and pass on the information. If he was not successful he would call back.



"My wife next informed me that our racing vet had no food, about one litre of water (which was uncomfortably hot), and no bedding. Gee, that's not very well equipped to travel half way around the world! It sure made us feel over-equipped.

"However, this is the Territory, and you cannot refuse a man tucker! So my wife cooked up some eggs and bacon, and a cup of tea for the Englishman, which he graciously accepted, and thanked her for the feed. Now for bedding... we borrowed cushions from the other caravaners, and a sleeping bag, and with that organised, having had no call from Ken at Alice Springs Base (and having seen no search aircraft overhead), it was off to bed ready for the big take-off at first light.

### 3 April 2001 — Daybreak

"We were out of bed to find our flying vet had rolled up his bedding, and invited himself to breakfast with some other campers; it was good of him to share himself around!

"Now for the big take-off... only one problem — the engine primer was faulty, as it had been since he left London. He needed a ring spanner to undo a jet that was blocked. We got him a ring spanner (which he thoughtfully kept) so with that problem fixed, we were ready for a start. He asked me to 'hold on to the plane' and prevent it from taking off without him. Come on! Who's kidding whom?

"So I leant on the wing, confident he was having me on, but when he swung the prop and the engine started, I quickly discovered he was fair dinkum! Finally he closed the throttle and climbed aboard. But then I asked him what he was going to do about the traffic. I explained that we have trucks (road trains) approximately 50 metres long, and when they're travelling at 100km/h, they can take a very long time to stop, even in an emergency. He agreed that could be quite a problem, so he organised a car to go 2km north and another 2km south to try to stop the traffic (if possible).

"All organised, our flying vet revved up the engine, covered us in dust (again), zoomed out onto the Stuart Highway, and off went our flying vet.

"We later travelled to Alice Springs, where we met with Ken Metcalfe to say a personal thank you. He informed us that he had been able to contact the London to Sydney Race organisers and avert an air search.

"Many thanks to VKS-737 Alice Springs Base, and the operator Ken Metcalfe.

## Outback Safety

The primary role of the VKS-737 Network is to provide safety communications for those travelling in the Outback, and this can be as simple as providing safety logging for members who are travelling, but at the other end of the scale we may have to arrange for mechanical assistance to those who are broken down or even liaise with the authorities to obtain medical assistance.

The following story shows how the VKS-737 Network, in conjunction with the SA Police and the Department of Environment & Heritage, provided assistance in the form of food drops for a large number of travellers stranded in the Simpson Desert during the recent floods...

## Transcontinental Clodhoppers Winter 2001

"Our aim was to travel from the country's most easterly point (Byron Bay) to the most westerly point (Steep Point) via Innamincka, Birdsville, the Simpson Desert, Finke and the Gunbarrel Highway.

"With what we believed to be all relevant passes and permits in hand, we headed west in high anticipation, enjoying clear blue skies with no indication of the drama ready to befall us. It started after we'd visited our friends Graham and Marie Morton of Innamincka Station where we were assured the overcast skies held little to no rain (famous last words).

"After overnighting at Coongie Lakes it simply *bucketed* down and we were extremely lucky to reach a dry Birdsville which had had no rain overnight. After two nights there and seeking out the National Parks Ranger we were advised we could head out into the Simpson Desert with care because heavy rain had fallen in the area of Mt Dare. We were told that, given the few days it would take to cross, it should have dried out.

"In actual fact, other than for some minor low-lying areas, the trip across the desert to Purnie Bore was wonderful. But from this point on, conditions began to deteriorate. Gluepot Plains lived up to its name to a tee.

"Upon our arrival at Dalhousie Springs we drove into the campsite containing some very forlorn people, and a short while later we were advised by the Resident Aboriginal Park Ranger, Dean Ahchee, that all tracks would be closed for a couple of days.

"I contacted Ken at Alice Springs Base and advised him of our situation. I suspect Dean was happy to have contact with a member of the VKS-737 Network, as that now opened up a communications network with the Oodnadatta Police.

"It was interesting to try to understand peoples' emotions when advised of the situation after all their travel plans had come undone. At this stage there were 30 stranded.

"The next morning Dean advised us that his mother had passed away. It really helped people to understand their situation, for if there was one person who was desperate to get out it was Dean himself.

"But Dean in his wisdom realised there needed to be a person to liaise with the authorities, and as I was communicating with Ken on the VKS-737 Network, Dean asked for my assistance.

"The campers gave me the classification of "Deputy Dog" of the Dalhousie Springs Refugee Camp. There was a group of four people who came up intending to stay only for the long weekend and were now running short of food, so this required pooling of resources to help them out.

"Then, as Murphy would have it, down came the rain again. Although we were on the fringe of the rain, a lot of rain fell above Dalhousie Springs and that, combined with the five inches that had fallen a week earlier, combined to give the area the heaviest rainfall ever recorded for the month of June.

"Consequently, the floodwaters had to move downstream with a peak of over 10 feet at Hamilton Station.

"During my daily radio skeds with the Alice Springs Base, Ken advised me that the Oodnadatta Police were concerned for the safety of three vehicles that had left Birdsville, but a couple of days later they arrived at Dalhousie Springs. I am still not sure that these folks realised that they were on the wanted list.

"We were so grateful to Dean for opening up the Bush Kitchen, which is for staff use. This had a three-burner gas stove and refrigerator. We were also offered the use of the office satellite phone at \$5 per call to contact relatives. Let me say that at a later date this fee was graciously waived by John Watkins, Regional Manager of National Parks at Port Augusta.

"The Oodnadatta Police were very concerned with our wellbeing, both as far as provisions and our health. I was now liaising with Senior Constable Mark Sutton who requested a stores list of everyone's needs to cover them for the next five days.

"We had to supply one only credit card number for these supplies to be purchased and for us to sort it out at our end.

"I was advised that 'heliboxes' were to be used, and that we could expect some breakages. These boxes can only carry stores up to a certain weight and therefore some boxes carried a lot more bulk than others did.



"The supplies were purchased in Coober Pedy by the Police and packed into 22 heliboxes before being passed on to the SA National Parks folk. I am sure that these guys never realised that purchasing supplies for our group would be included in their duty statements!

"The big day arrived, and we were advised that the drop would take place at about 5:30pm. At last, the drone of the plane was heard, and out of the sky approached a twin-engined Cessna 410 owned by the SA Police. From the air we must have looked like a pack of prairie dingoes looking to where the boxes landed, seeing us racing out to retrieve them before the next flight over! In all, 22 heliboxes were dropped in. The boxes are designed with flaps extended at an angle, so when they're ejected out of the plane they "helicopter" down at a slow rate to restrict the impact. We were very lucky to only have two breakages, one packet of flour and one of rice.

"For the next two hours Lyn (Quebec 74) and Andrew (Quebec 3108) took on the mammoth job of dividing up the supplies and costing them out. Even though morale was high, people went through mood swings. Things changed for the better with the distribution of the stores. That night all sorts of exotic meals were discussed... "Cordon Bleu" won out again.

"Bill from Tasmania organised a concert, and encouraged us all to put items together. Well, *what* a night it turned out to be! A very talented bunch indeed. We laughed until our sides split. No one wanted to go to bed early that night.

"After being marooned for eight days, we finally received the call from Sgt Kim Goreham of Oodnadatta Police saying that, if we could leave no later than lunch, there was a fair chance of our making it through to Oodnadatta. In all, 12 vehicles including ourselves, departed. It became apparent how flooded the area was. It took eight hours to travel the 180km to Oodnadatta!

"We ended up fording some of the creeks with water lapping over our bonnets and were met by the Police at Mt Sarah Station, 80km from Oodnadatta, and escorted into town, fording some extremely deep crossings in the dark. The other seven vehicles left Dalhousie the next morning and again were escorted out by the Police.

"Both Lyn and I look on the whole experience full of good memories having made some strong friendships with the other refugees.

"I would like to personally thank...

**SA National Parks:** Dean Ahchee (Ranger); Robin Young (Pilot); John Watkins (Regional Manager).

**SA Police Oodnadatta:** Sergeant Kim Goreham; Senior Constable Mark Sutton; Constable John Coombe

**SA Police Coober Pedy:** Mike Wakelin; George (last name unknown) who I believe did the shopping.

**VKS-737 Alice Springs Base:** Ken Metcalfe

*From Shane & Lyn Rieck, VKS-737 Quebec 74.*

Anyway that is all the space (and time) that I have available for this issue. Next issue I plan to have details of a new memorial being erected which will include many famous people including Alf Traeger, the inventor of the Pedal Wireless. Remember, if you have any interesting stories or questions about outback communications, please feel free to contact me at [vks737@radiomag.com](mailto:vks737@radiomag.com). Until next time, 73 from Steve. **R**

## And now to something technical!

I regularly receive requests from VKS-737 members on the correct length of wire to use in an emergency to replace a broken HF antenna. Generally I refer them to (or send them a copy of) an article published in the December 1997 issue of the VKS-737 member magazine, *Network News*.

The article was originally written for us by Peter Collise, who at the time was the Communications Liaison Officer for South Australia Police. Peter was responsible for arranging the very close working relationship that now exists between VKS-737 and SAPOL.

Unfortunately, Peter later retired from SAPOL due to ill health, but the legacy of his work continues through his successor Merge Presser with assistance from Tony Grigg.

Thanks for your efforts, Peter!

## Emergency Antenna Construction

There may be occasions when damage to a whip antenna, distance, or topography makes communications difficult or non-existent. In such cases, a wire antenna can be constructed which will, in most cases re-establish communications.

The length of the antenna has a direct relation to the frequency of operation therefore the wire must be cut to the correct length. The following formula will give the length of an emergency wire antenna:

Length in metres =  $\frac{71.25}{\text{Frequency (in MHz)}}$

eg  $\frac{71.25}{3.995 \text{ MHz (3995kHz)}} = 17.84 \text{ metres.}$

Length in feet =  $\frac{234}{\text{Frequency (in MHz)}}$

eg  $\frac{234}{3.995 \text{ MHz (3995kHz)}} = 58.57 \text{ feet.}$

The length of wire required for VKS-737 frequencies is as follows:

Frequency	Metres	Feet
3995kHz	17.84	58.57
5455kHz	13.06	42.90
8022kHz	8.88	29.17
11,612kHz	6.14	20.15
14,977kHz	4.76	15.62

If insulators are used, the length is measured from the hole in the insulator through which the antenna wire goes. Therefore, the wire must be cut longer than the calculated length to allow for insulator wrap around.

Obtain some copper wire (preferably plastic coated) and cut it longer than the length calculated for the frequency. Attach an insulator (nylon rope will do) to one end of the wire so that the distance between the hole and the end of the wire is the correct length.

Attach a length of rope and a weight to the end of the rope with the insulator on, throw it over a tree and pull tight.

Strip about three centimetres (one inch) of the plastic coating off the free end. Poke the exposed wire between the coils on the antenna spring base, and remove the whip antenna altogether.

In general, the most effective wire is approximately 45 degrees to the ground and broadside to the base station. When there is no means of hoisting the wire up, it can be laid out in a straight line on the ground. In this case propagation occurs with maximum radiation in the direction in which the free end points.



# A DC to 2000 MHz RF preamplifier for scanners and SWLs

By Ron Bertrand, VK2DQ

Would you like to increase the sensitivity of your shortwave or scanning receiver by as much as 20dB? We describe how this can be achieved with an add-on external broadband RF amplifier costing just a few dollars. The best method to pull in those weak signals is to use an antenna with more gain. For many enthusiasts gain antennas are not an option. For a start, increased gain means greater directivity. Such directivity can be a significant disadvantage. Even making the antenna rotatable is not always a practical option when it is desirable to receive signals from many directions at once. For scanner users, a single broadband antenna is most practical. A simple wire antenna or perhaps even a discone is often the antenna of choice and compromise. Such systems can really benefit from a RF broadband preamplifier at the antenna or at the back of the receiver.

I have done quite a lot of experimenting of late with RF preamplifiers for boosting low level signals to allow for easier measurement. I have found the monolithic circuits manufactured by Mini Circuits to have excellent characteristics, are inexpensive, and are very simple to use.

Recently I built a television masthead amplifier kit supplied by Branco Jusic of Oatley Electronics in Sydney. This kit is great value at \$15. This simple kit utilises a Mini Circuits MAR-6 monolithic amplifier. I did not want a masthead amplifier. I wanted a preamplifier for my scanning receiver. My purpose in building the kit was to evaluate it for this application.

• B • A • S • I • C •  
**ELECTRONICS**

Figure 1 shows the manufacturer's suggested use of the MAR-6 amplifier. Now this is very straight forward indeed. The MAR-6 is a surface mount IC with four leads as shown. All this chip needs to function is DC power supplied through Rbias. An optional RFC helps isolate the supply with two blocking capacitors on input and output.

It is very easy to cut a small piece of copper board with a knife and remove some copper to make a suitable board for the MAR-6 and the couple of components needed. You will also need a couple of RF connectors. I used the BNC type. The board measures about 20 x 20 mm. You could make a 'box' out of the unit by soldering sides on to the base board from scrap copper clad board.

But a far easier way is to use the Oatley Electronics kit. I will explain how I used this kit (which is meant to be a masthead amplifier for a TV antenna) to make an RF preamplifier for my AR-2002 scanner shortly.

There are other amplifiers besides the MAR-6, however the MAR-6 is in my view the best choice for gain and noise figure (2.8 dB). Too much gain will only increase receiver intermodulation problems. Table 1, opposite, lists the important specifications of the MAR-6. The device amplifies up to 2GHz.

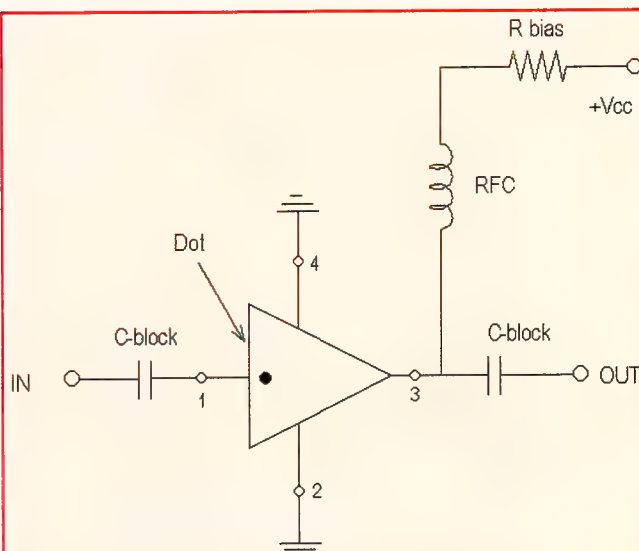


Figure 1 - The MAR6 - Wideband RF preamplifier for receivers





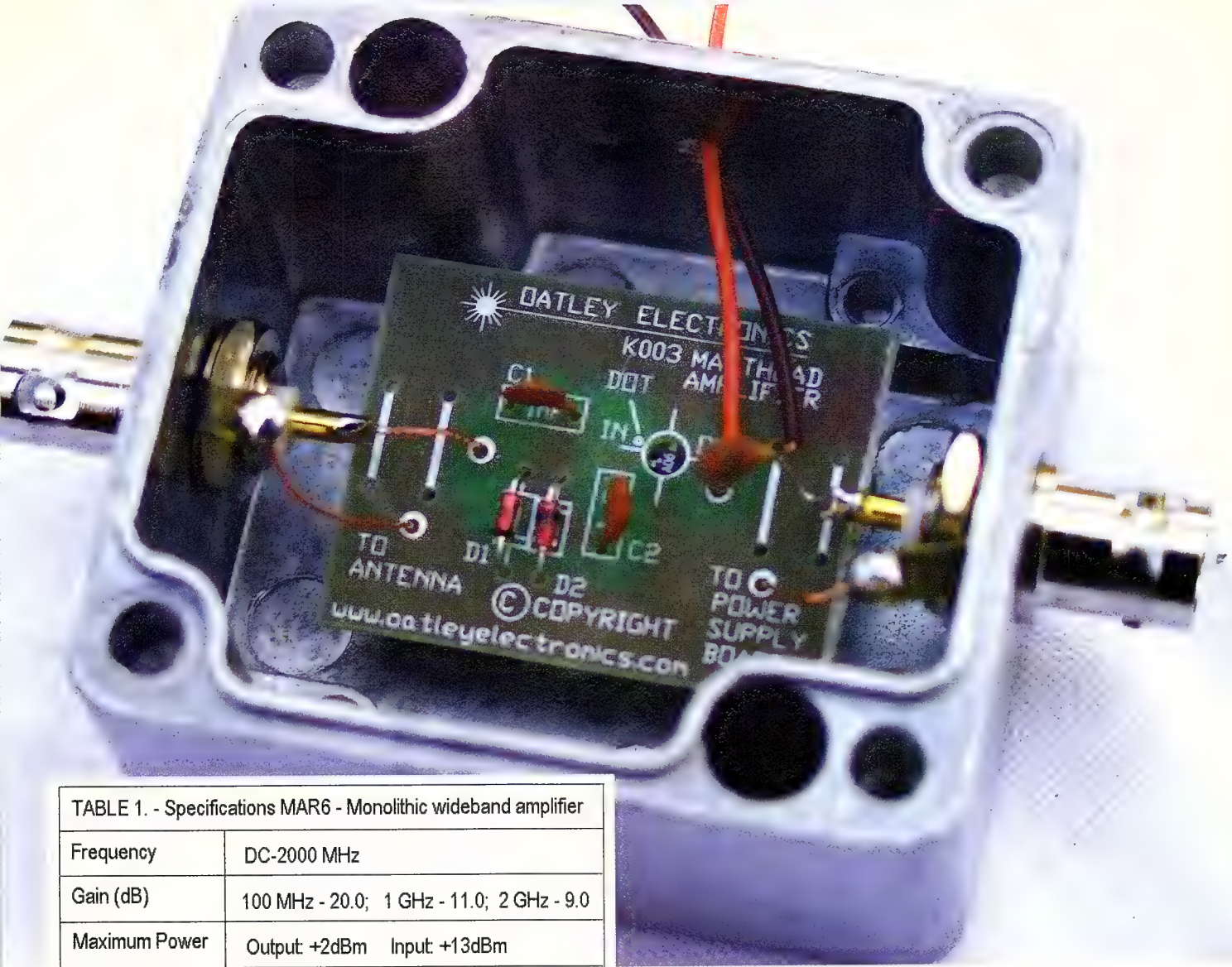


TABLE 1. - Specifications MAR6 - Monolithic wideband amplifier

Frequency	DC-2000 MHz
Gain (dB)	100 MHz - 20.0; 1 GHz - 11.0; 2 GHz - 9.0
Maximum Power	Output +2dBm Input +13dBm
Dynamic Range	NF - 3dB; IP3 +14.5 dBm
DC Power	16mA @ 3.5V Typical.

In truth, I have not used it anywhere near this high. I have tested the gain at 1.1 GHz and it was 10 dB. On lower frequencies the gain is higher. The device gives a very respectable and useful gain up to and beyond 1GHz. More gain than this on your receiver would require you to add bandpass filtering – simply not worth the effort for most users. The current drain is a low 16mA at 3.5VDC. You can download the full specifications from <http://www.minicircuits.com>. The Oatley Electronics Kit includes all components, and a circuit board, for use with a simple regulated power supply, and this too is supplied in the kit. Figure 2, overleaf, shows the schematic of the kit.

There are two circuit boards that come as one piece. Just score the board a few times using a straight edge and a utility knife, then snap it in two. One board is for the MAR-6 amplifier, the other for the power supply. You will need an AC or DC plug pack as well. (Oatley Electronics can supply these as well.)

The amplifier is shown at the left in Figure 2. The two diodes (D1, D2) are high speed switching types with very low capacitance. These diodes protect the IC from excessive input voltages from strong nearby transmitters or even static build-up.

The other circuit board is for the basic 5 volt regulated power supply using a 7805 three terminal regulator IC. As I said, the kit is meant to be for a masthead amplifier for a television receiver.

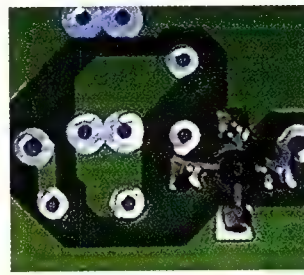
Therefore, to get the power aloft, it is usually delivered to the amplifier through the coaxial line to the antenna. If you are going to use the amplifier on the antenna mast, you can use this arrangement.

My preference was to install the amplifier in a die cast aluminium box and supply power directly to the unit. Notice how C3 is a DC blocking capacitor between the output of the MAR-6 on Pin 3 and the receiver input. Because I did not power the amplifier through the coaxial lead I shifted this capacitor to the point marked "note\*" on the schematic. In other words, I moved C3 from the power supply board to the position of the blocking capacitor 'Cblock' in Figure 1. There is no need to mount 'Cblock' on the board. Solder it between the board and your output connector as shown in the photo.

The kit is very easy to assemble. Perhaps the only thing that may worry the beginner is the surface mount MAR-6 amplifier. The IC is soldered on the copper side of the board, as shown below. The IC was the *first* thing I did.

Make sure the 'dot' on the device is aligned with the 'dot' printed on the board. You can solder each of the four leads to the board with an ordinary fine tip soldering iron.

Make sure the soldering iron tip is clean and tinned (dab a little solder on it). Apply solder to each leg quickly – it should take no longer than 3-4 seconds to solder one leg.





# Build a preamp for scanners and SWLs...

It is usual to solder semiconductors last. However as there are only a few components I chose to solder the IC first – it is small and a bit fiddly – but once one leg is soldered you home and hosed! The two boards can be fully made up with all components within 15-20 mins by a beginner.

If the DC power leads to the amplifier are going to be more than a few centimetres I suggest you use a scrap piece of coaxial cable. Just use a piece of coax from the power supply to the amplifier as if it were two conductors. Connect positive to the centre conductor and negative to the braid. In effect, you are then using a shielded power lead connection, which can reduce the possibility of noise pickup and unwanted 'antenna' effects of the leads.

The preamplifier will work well on almost any receiver. If you use it on a transceiver, it should be switched out during transmit or connected to the receiver only. Even then, use caution not to allow strong RF into the amplifier.

If you wanted to use the amplifier portable you could fit it with a battery, and inside the case would best. Battery life will be substantial, as the current drain is only 16-25mA depending on the supply voltage. A small 9-volt 'transistor' battery would be fine. You would need to change the value of Rbias to 120 Ohms.

I use a very modest vertical antenna on my AR2002 scanner. The preamplifier makes no apparent difference to strong signals, though I don't have many of these. Weak signals are substantially improved – to the point I can find many signals with the preamplifier switched in that I cannot even hear with it switched out. I am very pleased with the improved performance.

The masthead amplifier kit (K003) can be

purchased from Oatley Electronics via the phone to (02) 9584 3563, or via their web site at <http://www.oatleyelectronics.com>. The price is \$15 not including postage. Be sure to order the optional jiffy box and AC plug pack if you need them. The kit comes complete with well-presented instructions for making a broadband masthead or distribution amplifier for television.

The following information appears on the Oatley Electronics web site:

## Oatley Electronics Masthead Amplifier Kit – K003

Based on a low noise (2.8dB noise figure) and wide bandwidth (2GHz) amplifier IC (type MAR-6), this kit can be used as the basis of a high quality masthead amplifier or a self-standing active TV antenna. The PCB supplied is divided into two sections: amplifier board, and power supply board. The PCB can be cut so that the supply board (which feeds the MAR-6 amplifier PCB located near the aerial) can be located indoors.

Note: there must be a DC path for phantom powering of the MAR-6 through the coaxial cable. Splitters and diplexers can break this DC path. The MAR-6 (see components section) is also available separately. Because of its predominantly resistive input, this amplifier seems to produce good results with any two metal wires or strips acting for the antenna. It should even work with some wires recovered from an old coat hanger!

Needs 7 to 15Vdc @ 25mA. Supply PCB: 44x28mm. Amp PCB: 44x28mm. Kit includes both PCBs and all the on-board components.

Small Black Plastic Box for Power Supply: (HB1) \$2.50

Weatherproof Black Plastic Box for Masthead Amplifier: (HB4) \$2.50

Please use Kit & Catalogue numbers when placing an Order.

Phone (02) 9584 3563 or visit <http://www.oatleyelectronics.com>

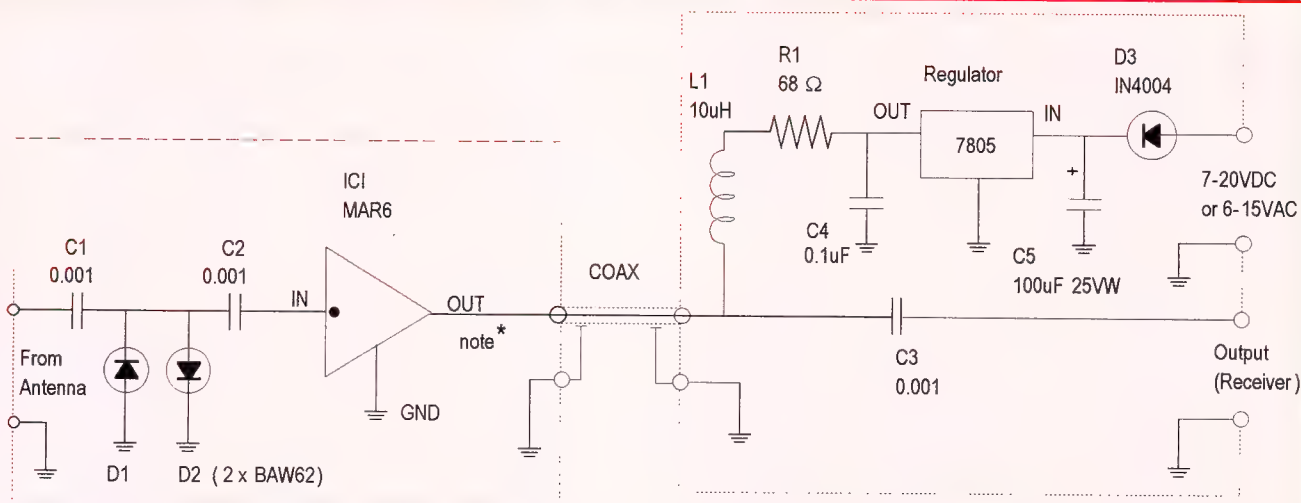
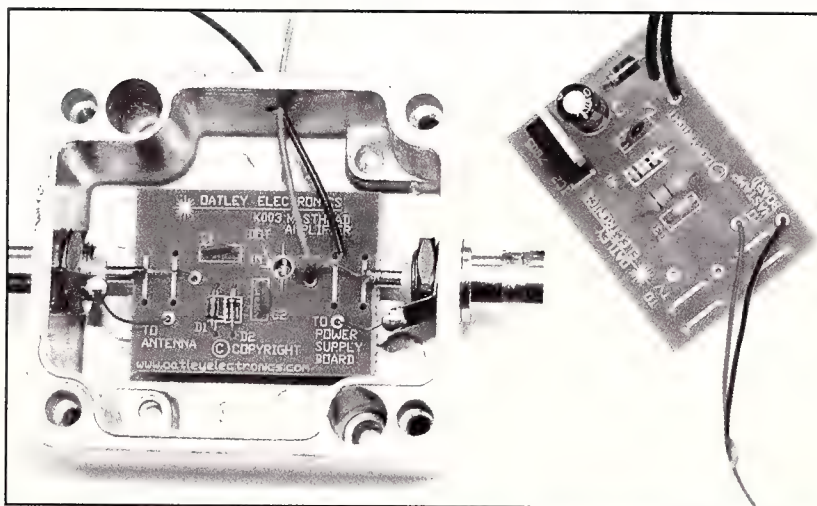


Figure 2. Broadband Receiver Amplifier - with power supply.



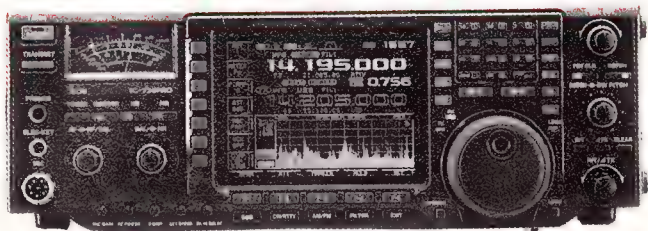
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- Joystick

## IC-207H



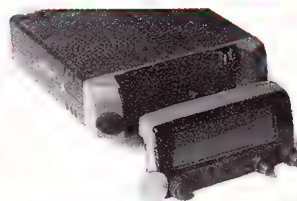
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# A cheap and effective antenna mast mounting



By Andy Beales, VK4KCS

Most hams who experiment with antenna design and construction would agree that one of the essential items for testing the latest masterpiece of aluminium elegance is somewhere to *stick* the damned thing to see if it actually radiates even a little bit better than the dummy load in the shack.

I've tried most permutations, and tying the mast to the stink pipe with string and seven year-old insulation tape was okay for a little while. (Well, it wasn't windy when I put it up!)

And I can tell you from experience that trees don't seem to last very long if you saw all the branches off. They had to go because they affected the radiation pattern, okay?

A star stake belted into the ground in the middle of the back yard worked quite well, but is not the most skin friendly object to walk into at 11pm at night. (The BBQ had started at mid-day and I was quite tired.) Besides, somebody always tries to balance a can of amber nutrition on top of the stake and I hate waste.

But then, browsing the shelves of the local automotive spare parts store one day, I spied an item that appeared to have great potential to solve this problem.

There, just waiting to be used for a purpose for which they were never designed, was a row of trailer Jockey Wheel clamps.

Could these be... Oh my!!

The other shoppers were quite startled when the little light lit up over my head... but you learn to ignore sideways glances and people suddenly remembering that they have to be somewhere else, if you are a dedicated ham.

For the total expenditure of \$20 I was the proud possessor of two clamps and the greatest idea since Albert E. had his mildly important theory about the meaning of relatives.

Next it was into the hardware store at flank speed for four 12mm Dynabolts — the kind that has an extension sleeve on it. The sleeve is actually discarded, but what you need here is about 25 to 30 mm of thread protruding from the mounting surface, which is exactly what you get. Eight extra galvanised nuts and washers and we're ready to go.





The verandah of my house is supported by 350 mm square brick pillars that are perfect for mounting temporary antenna masts onto, but timber posts, walls etc and coach bolts (the ones that have a screw thread at one end a metal thread at the other) for securing the clamps should be equally as effective.

The whole thing is starting to become clear to you now? Check out the pictures...

I secured the top clamp to the pillar, taking care to get the clamp as level as possible. There is a little leeway for subsequent fine-tuning, because 12 mm Dynabolts have a 10 mm bolt in them and the holes in the clamps are 12 mm across.

After the first clamp is fitted, secure a piece of suitably sized (30 to 45 mm) pipe in it, long enough to reach to where the second clamp will be fitted. Put the second clamp on the pipe and use a spirit level to make sure that the pipe is vertical. Mark and drill the holes, then fit the second set of Dynabolts in place.

After tightening all the nuts on the Dynabolts (but before refitting the clamps), put an extra nut then a washer on the protruding thread, and fit the clamps. Another washer then a nut on each Dynabolt completes the assembly.

By adjusting the back nuts on each clamp, any deviation from vertical of the mounting structure can be accommodated.

There it is, a secure mast that can be rotated by the Armstrong method from the ground (it helps to loosen the clamps a turn of the handle first!), is out of the way and can be lowered to make adjustments to the antenna or even removed completely in a matter of seconds.



## Two Step Tuning

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(Please note: HF Tuning doesn't get much easier than this.)



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## Baudwalking

**A note from the Editor:** R&C readers would be well acquainted with the popular "Baudwalking" column of old. The column has grown up a lot over the years to be an indispensable guide to what's on the net. So we figure that's what we should call it from now on: **On The Net**. Welcome back, Tom, and over to you...

Greetings to the combined Radiomag and Radio and Communications readers! For those of you not familiar with this column that's been running since 1995, we tackle what's new on the Internet in terms of radio and communications in its broadest sense. We may deal with regulatory issues, changes on the broadcasting and amateur radio and CB radio scene. We may dabble with cellular telephone or satellite topics. With Radiomag's foray into electronics, we'll keep an eye open for what's new in this field. Occasionally we will go off-topic to highlight an interesting computer topic or piece of software, such as you will read below in *Ramping Up the Internet*.

I have been writing for magazines since 1966, in microcomputers since 1979 starting with an Apple II, ran a worldwide telephone BBS in the mid-1980s, and have been on the web at <http://www.trsc.com/> since late 1994. Have a look at

the Web site, E-mail suggestions or questions for the column to [baudwalk@radiomag.com](mailto:baudwalk@radiomag.com) and come along for the ride.

### Scanning receiver restrictions

On May 22, the USA's Federal Communications Commission released a memorandum opinion and order affirming its ban on cellular-capable scanners. The order was in response to a petition by Radio Shack and Uniden to forego the stringent requirements on scanners that do not tune above 512 MHz.

Both companies claimed the requirements add cost and complexity to such receivers that cannot tune the 800 MHz cellular frequencies. Read the full FCC document here: [http://www.fcc.gov/Daily\\_Releases/Daily\\_Business/2001/db0522/fcc01160.txt](http://www.fcc.gov/Daily_Releases/Daily_Business/2001/db0522/fcc01160.txt)

A discussion followed on in the [rec.radio.shortwave](http://rec.radio.shortwave.newsgroup) newsgroup, expanded to include proposed bans in the HF frequency ranges. These excerpts show the undercurrent that listeners have to be on guard for:

*"Actually, HF has been targeted for commercial interests as well, and not four years ago, Billy Tauzin proposed, and got serious attention for, legislation that would carve up the electromagnetic spectra,*

*including HF, into acceptable, and unacceptable bands for public access, proposing that all receivers sold in this country be limited to spectra designated for public broadcast, only.*

*Restricted spectra would include utility, and so-called public service transmissions, police, fire and business band activity. He even went so far as to relegate the ham bands to amateur service receiving equipment only. His proposal was soundly defeated this time. Many of those proposals have been resurrected.*

*"Large segments of HF have been proposed for sale to commercial interests for data transmission in the US. The international nature of HF transmission, and the huge potential interference conflicts with other services not withstanding, there is continuing effort to attempt to carve up spectra below 30MHz for commercial interests, and limit public access to receiving equipment for them.*

*"There is certainly not cell money, or that kind of economic power behind commercial HF. But that wasn't the thrust behind Tauzin's bill. Tauzin wanted to restrict access to non-broadcast HF to limit public access to HF bearing similar services to the PSB and business bands. Marine search and rescue, for one example, would be removed from HF capable receivers. HF data transmissions, amateur service, business band, international air traffic... all would be removed from HF capable receivers sold to the general public for the same reasons that Tauzin wants to remove police and fire, DEA other governmental use frequencies from VHF and UHF receivers. This is not commercial interest here; this is simply restriction from public access for the purpose of secrecy.*

### Save the BBC World Service

I have previously written about the probable closure of shortwave services directed to Australia, New Zealand and North America. In protest of a July 1 cutoff date, a listener coalition to save the BBC World Service was formed in early June; its Web site is <http://www.savebbc.org/>. The site attracted a lot of media attention both in the UK and elsewhere around the globe. Correspondence with British Parliament members, various Foreign Commonwealth Offices, BBC staffers and news reporters makes for fascinating reading.

Now we know the cuts, in fact, *did* take place. The coalition continues its work. In the meanwhile, some strange things happened to the BBC frequencies. The Singapore frequencies directed to Australia went silent, but Radio Netherlands hired airtime from Sackville and Delano and appeared on the ex-BBC NA frequencies July 1 with a special "showcase" program. The special aired until July 4 or 5 until regular programming feeds could finally be connected. Needless to say, BBC management was quite annoyed. As we go to press we don't know if the airtime hire is permanent.

Check the Media Network page at <http://www.medianet-work.nl> for updates.

To add insult to injury, the BBC has now announced — quietly — that it is seriously thinking of charging for Internet content due to costs. The Register has the details at <http://www.theregister.co.uk/content/6/20163.html>. Recent studies appearing in stateside trade publications show that subscription-based web sites do not work — and often fail — when the information has previously been free.

This whole situation is insane... plain bloody stupid... whatever you want to call it. Australia, New Zealand and the USA are not sufficiently wired with broadband services to deliver audio. Excepting a few stations that can be counted on one hand, FM broadcasters only run bits and pieces of BBC programming overnight. And portability is no longer an option — forget the little shortwave radio that once could but no longer can hear the BBC when travelling.

Let's hope the Foreign Commonwealth Office represents the Commonwealth citizens in the Pacific and makes the BBC amend its ways.



*"But there are commercial interests in HF developing. The telecom interests have been experimenting with wireless DSL hubs. Proposals have included both VHF and HF spectra for these types of systems. Short range, neighbourhood hubs could well use HF for this kind of service, and there is commercial interest in purchase of these spectra."*

"It's not just the cell company interests at play here. And HF is definitely not exempt as a target. But there are commercial interests in HF developing. The telecom interests have been experimenting with wireless DSL hubs. Proposals have included both VHF and HF spectra for these types of systems. Short range, neighbourhood hubs could well use HF for this kind of service, and there is commercial interest in purchase of these spectra."

With the melding of HF and scanner-type radios into the "DC to daylight" region and the danger of legislative action by the US Congress, we must be on guard for such restrictions. Will the scare tactics spread to Australia? It might be a possibility, as special interest groups become vocal. The ARRL, WIA and NZART can perform these tasks for radio amateurs, but it's our experience that not many amateurs recognise the need to also protect the interests of the shortwave listener and the scanning enthusiasts. The "public airwaves" may not be so public in the years to come. Watch, and respond as necessary.

## Web radio stations struggling

The Web radio business in the USA is undergoing some difficult times these days. Jane Blane wrote for a Business Week article and stated, "That's about par for the course in the struggling online radio sector."

"While it has wowed listeners by offering more choice and innovative programming than traditional radio, online radio has failed to catch on financially.

"Although 75.5 million people tuned into online radio stations last year, and 106 million are expected to tune in by 2003, according to estimates from digital entertainment consultancy *Webnoize*, such numbers don't make up for the lack of a clear business model."

Although the story is USA-centric, it makes for interesting reading and it may give pause to Australian and New Zealand stations implementing Web streaming.

Read the full story at [http://www.businessweek.com/technology/content/jun2001/tc20010621\\_046.htm](http://www.businessweek.com/technology/content/jun2001/tc20010621_046.htm)

A new measure of the numbers of listeners to radio stations streaming audio on the Web appears on MeasureCast.

The company claims to be the first audience-measuring service for audio streaming radio.

A “top 25” is posted each week. The numbers indicate to us the huge disparity between the “haves” and the “have-nots”: the first station has almost twice the number of number two.

Check out MeasureCast at <http://www.measurecast.com/>. By the way, don't be fooled by 3WK, fourth on the list.

This Internet-only underground station has a Australian-type call, but the domain registration shows that 3WK is in Chesterfield, Missouri, USA.

## Quickies

- Travel back to the early days of radio and build a spark gap transmitter. We found an article titled "The Design of a One Kilowatt Arc Converter" published in the March 1920 issue of *Radio Amateur News*. Read it at <http://www.geocities.com/CapeCanaveral/Hangar/6160/poulsen/>, build it and wipe out all radio and television sets for a radius of several kilometres!!
- Bob Colyard, of New Jersey, USA, has renamed his "Shortwave & DXing Home Page" to "DX World" and the URL has changed from <http://www.cybercomm.net/~slapshot/speedx.html> to the new (and easier to remember) one of <http://www.dxworld.com/>
- ZDNet, a tech portal whose parent company Ziff-Davis publishes a host of computer magazines, has a lot of software for download. Two freeware Windows programs were pointed out to me.

"Bugnosis" checks Web pages and E-mail for "Web bugs" — invisible 1x1 pixel images used for tracking reading of HTML-formatted E-mail and Web pages, in lieu of cookies. Version 1.0 requires Internet Explorer 5.x; it won't run on IE 6.x or Netscape browsers. Get Bugnosis from <http://www.zdnet.com/downloads/stories/info/0,10615,78433,.html>. As we primarily use NS 4.76, we have not tried this program yet. Let us know what you think of it.

"Bandwidth Meter 2001" is an unobtrusive utility program that monitors up to eight different TCP/IP connections and displays the current and (optionally) the average upload and download rates of dial-up and broadband connections. For dial-up users, modems typically display the serial port connection speed of 115 kbps. Now you can see if your 56 kbps modem is *really* working as it claims. We like this one. Get it from <http://www.zdnet.com/downloads/stories/info/0,10615,75288,00.html>

## Broadcasting directories

Lists, and more lists... they are to be found everywhere. These are the latest to come to our attention.

[illegible]

The Australian Broadcasting Authority (ABA) is an independent federal statutory authority responsible for the regulation of free-to-air radio and

television, pay TV, digital broadcasting and Internet content in Australia. The Radio and Television Broadcasting Stations 2000 has been prepared from ABA records held in the RADCOM database, and is current as of June 2000.

Available as a print publication, it is also available as multiple PDF files with MW and FM by call and frequency and area served. Details are at [http://www.aba.gov.au/what/broplan/broadcasting\\_stations/](http://www.aba.gov.au/what/broplan/broadcasting_stations/)

As an aside, we found this ABA list by our search for an Internet-audio-enabled Australian station that carries local coverage of the Australian F1 Grand Prix. There is no joy so far. Do you know a broadcaster with Internet audio covering the F1 race? (Tom, while the Melbourne race has its own FM station set up for the days of the race, its low-power transmitter is only available in Melbourne itself. I used to be able to hear it from my home about 40km from the track, but weakly. However, Melbourne broadcaster 3AW (1278kHz) carries a lot of GP traffic, and, better, streams live to the Net 24 hours a day. I listen to it up here all the time! Try <http://www.3aw.com.au>. Ed.)



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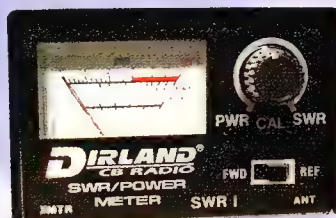
**Master 2002** – Simultaneous connection to 3 transceiver. **\$345**



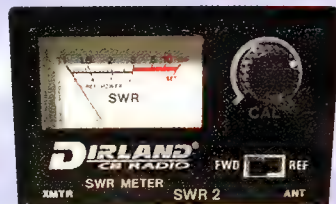
**CTE C747** 120 watt **\$125**



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**26-30 MHz SWR meters**  
SWR 2 swr meter **\$15**



SWR 1 swr/power meter **\$18**



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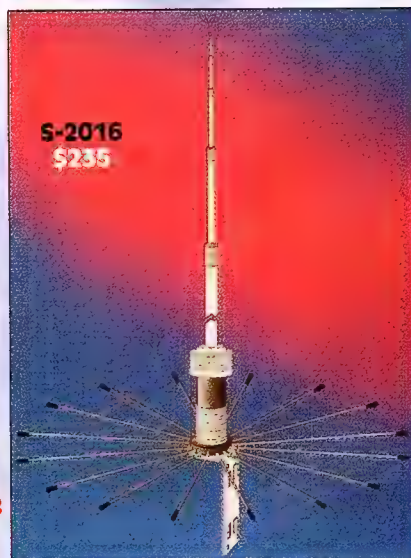
**F15** Handheld frequency counter  
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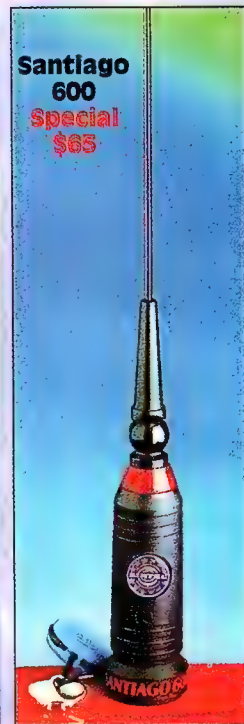
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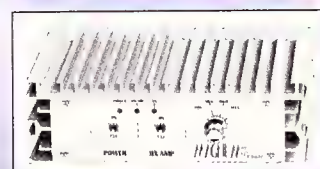
**S-2016**  
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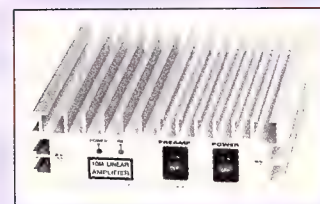
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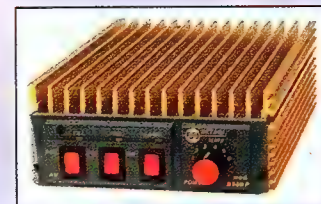
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# ON THE NET

I don't speak Spanish, unfortunately, but it appears to me that [cuba.cu](http://www3.cuba.cu/portal3.php?categoria=Noticias-Radio&base=0) is a portal with a search engine. By entering the URL of <http://www3.cuba.cu/portal3.php?categoria=Noticias-Radio&base=0>, the results show a listing of Cuban radio networks and some stations. The DXer may wish to revisit this listing periodically.

Virgilio Krumbacher of Munich has a worldwide station directory with a difference. Notably, listings are available by format (in addition to location). Stations in Africa, Asia, Oceania, Europe, Americas, Brazil, Canada and the USA are included. Internet-only broadcasters are also included. We haven't checked out this site in detail, but there certainly are a variety of choices to be made. The two popup windows per page are bloody annoying; launch Popup Killer or Killad before visiting <http://www.radio-stations.net/>

Lane Griswold's "Shortwave Stations of the World" is in its infancy at <http://www.users.qwest.net/~lgrswold/>, but nevertheless you may find a listing for a station that you have not seen elsewhere. Check back periodically to see...

## Solar Output and Propagation

USA's NOAA has posted a D-region absorption prediction page to put a "picture" on what happens when there is a solar flare. Flares most dramatically affect the lowest layers of the ionosphere on the sunlit side of the earth and sky wave signals disappear.

The page is based upon the one-minute GOES X-ray flux data and is worthwhile checking when a flare occurs. Take a look at [http://www.sel.noaa.gov/rt\\_plots/dregion.html](http://www.sel.noaa.gov/rt_plots/dregion.html) and follow the links to the explanation and other links within the NOAA Web site.

*"Welcome to the Lockheed Martin Solar and Astrophysics Laboratory. LMSAL is a department of the Lockheed Martin Advanced Technology Centre (ATC) in Palo Alto, CA. We are a group of scientists and engineers who design, build, and operate solar and astrophysical observing instruments. LMSAL and the Space Physics Lab comprise the ATC's Space Sciences Office."*

And with that greeting, the reader is launched into an interesting array of pages under the heading of "solar and astrophysics lab". LMSAL is working on a host of imagers; look under "Projects". You'll see links to TRACE that produced this view of the "plagued" surface of the sun with energy loops rising from the surface. Also check under "Our Science: Links" for other Web sites. Bookmark and look at this site: <http://www.lmsal.com/>

## Crossing the screen

In all the E-mail and Web sites that cross our computer display, we've run across some interesting software that may be of interest to you. These, as usual, are Windows applications.

**Ad-Aware.** In months past we've written about spy software that silently reports user activities and PC configurations to a third party. Steve Gibson of Gibson Research (<http://www.grc.com/>) wrote at length about the subject and offered "Opt Out" to remove the offending DLLs and related reporting software.

Now that the problem is widely known and other companies have stepped forth, Gibson removed Opt Out from distribution (the discussion and background material remain on Gibson's site). Lavasoft is one company offering anti-spy software. "Ad-Aware" is one of the better products we found, and it's free.

It examines memory, the registry and the fixed disk; in fact, it offers the option of checking all drives on the PC. We like it: <http://www.lavasoftusa.com/>.

For US\$15, "Ad-Aware plus" includes "Ad-Watch" that monitors program installations in progress and alerts the user.

Since we mentioned the program last July, the final version of 5.5 was released.

**MemoKit.** It isn't just the lack of physical memory that can cause the PC to become unstable and possibly freeze up. As we load up the system tray, the lack of Windows resources is the culprit to be dealt with.

Memokit, used in the beginner's mode, simply recovers free RAM and optimises on a regular basis.

Low resources and free RAM, set with "trigger points", warn the user through a pop-up dialogue box.

The advanced mode allows the user to set the interval between memory recoveries and trigger points and view, graphically, over time, the percentage of resources and amount of RAM.

We experimented with programs in the system tray, and were quite surprised at the amount resources recovered after exiting the instant messaging program ICQ, in particular, and a few other programs.

ALS Software's MemoKit costs less than US\$30, with a 30-day money back guarantee.

Download the program and pay with a credit card at <http://www.memokit4all.com/>

Let us know what you've discovered this month. E-mail us at [baudwalk@radiomag.com](mailto:baudwalk@radiomag.com). Visit us at our Web site <http://www.trsc.com/>

R

## Ramping up the Internet ... an occasional series of hints and tips

Shall we murder the English language? Two Web sites crossed our browser this past month, and both can be quite funny (depending upon your sense of humour). These would be perfect tools for the useless office report. (Dilbert, anyone?) The automated translation by Systran can completely mangle an English sentence when crossed over five languages. Test it out at Lost in Translation: <http://www.tashian.com/multibabel/>. The second site changes English into other variants of the language. Our favourite flavour is "RedNeck". Check out The Dialectizer at <http://www.rinkworks.com/dialect/>.

On a more serious note, if one believes Steve Gibson of Gibson Research (and we do), the new Home edition of Windows XP is fraught with security problems. In May 2001 the Gibson servers underwent a 'denial of service'

attack — a flood of many requests that effectively stops the server(s) from responding — and it took Gibson a bit of time to diagnose and solve the problem. In doing so, Windows XP was discovered to have new support of the full raw socket application-programming interface, something not available in previous Windows versions.

The bottom line? Applications running the Home edition of Windows XP will be wide open to attack — by accident or by purpose — without any means of defence. I don't pretend to be a computer engineer, and this magazine is not a PC magazine, but if you live on the Internet this may be interesting reading: <http://grc.com/dos/intro.htm>. This danger, plus the reinstall restrictions on Office XP, has us — we can't believe it — actually thinking about changing out to Apple.



# On Climb

By Richard Fox. E-mail [onclimb@radiomag.com](mailto:onclimb@radiomag.com)

The face of Australia's aviation industry is an ever-changing one, and in the next few years we will see huge changes in the types of airliners that will be seen in Australasian skies. Qantas has ordered the new Airbus A380 that can carry 555 or more people 8000nm and has also ordered the Airbus A330, so if you own a scanner or a high frequency communications receiver you will have a front row seat to this very exiting time. Over the next few months, we will look at how to get the best out of your aviation monitoring time. We will look into tracking all types of aircraft and what is happening on the flight deck of an airliner during a flight.

This month we introduce the basics of aviation monitoring and the tools needed to get started...

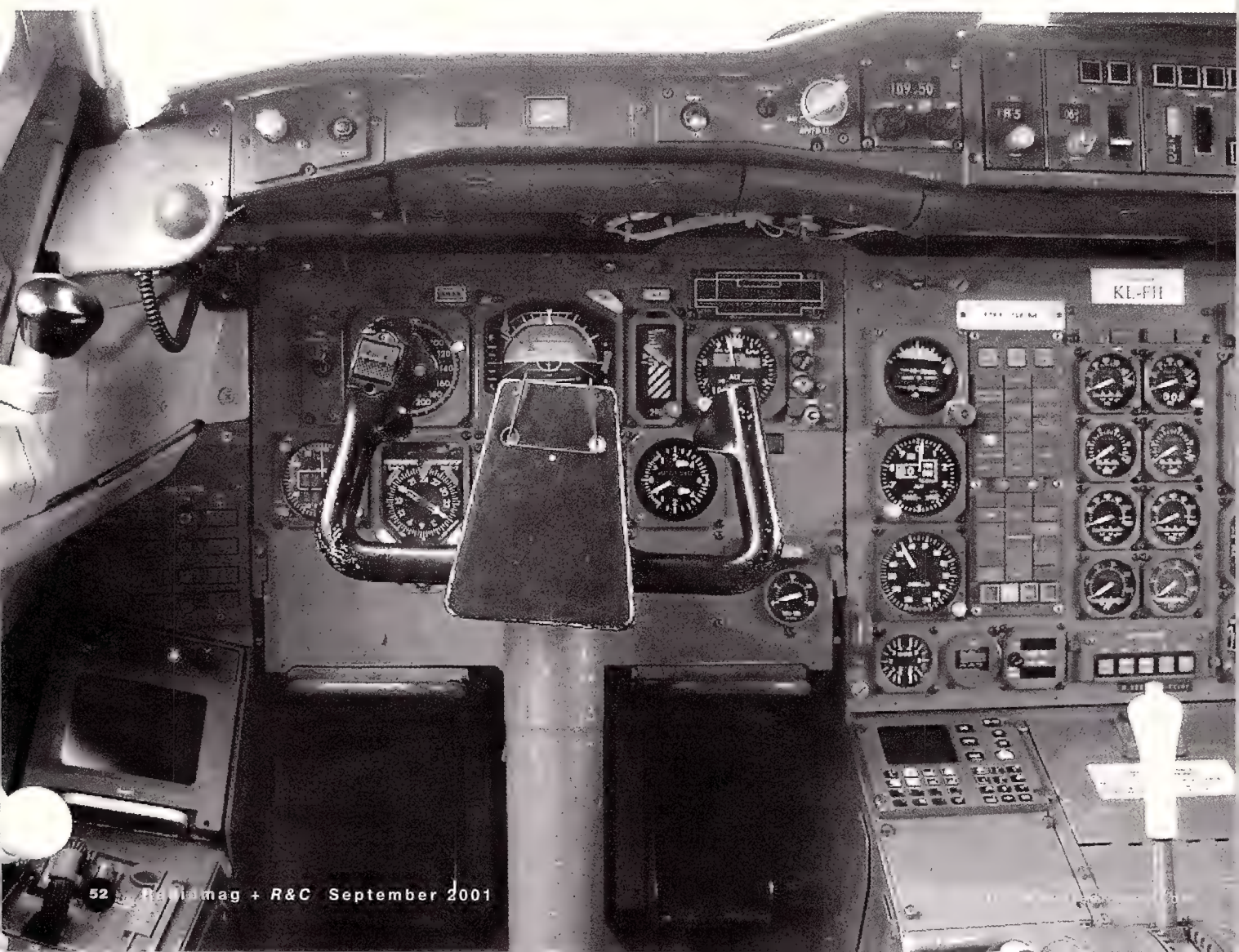
To monitor Air Traffic Control, or ATC, we will need a scanner that is able to monitor the Very High Frequency or VHF air band that extends from 109 to 135.95MHz, and this band has 25kHz spacing here in Australia.

Amplitude modulation or AM mode is used on the VHF air band. The VHF band is used for navigation, voice communications and digital communications and has a range of about 150 kilometres plus, depending on the altitude of the aircraft. *Dick Smith Electronics* and other communications stores sell a very good

entry level hand-held scanner made by Uniden called the Uniden 120XLT, and it sells for around \$300. With this type of scanner you will be able to monitor everything from a Qantas 747 on its final leg of an international flight to an Air Ambulance during a life-saving medical evacuation flight.

If you like what you hear on the VHF band you may like to try the High Frequency or HF international aviation shortwave band. On the HF aviation band you could hear Qantas Flight 11 passing over Lord Howe Island at 35,000 feet, or a United Airlines Flight with engine problems over the Atlantic Ocean talking with United operations in the USA.

To monitor the HF aviation band you will need a radio with upper side band, or USB, mode.







Photographs on this page by Chris Sheldon, London

This type of receiver is available for a few hundred dollars from some of the advertisers in this magazine. There are two very good entry level shortwave radios made by Sangean, the ATS-909 and the ATS-818. Both radios sell for around \$400.

Also, don't overlook the second hand market for bargain scanners and HF receivers. The next item for our aviation monitoring box of tricks are airline time tables that are available from the airlines if you ring and ask — or, of course, you could get most of the information you need from the Internet at each carrier's web site.

The time table is a great asset, as it will give you quite a lot of information about a flight that you may be listening to, like aircraft type, departure and destination airports and so on... a must have. The next item is a pen and a note book so you can keep track of what you are hearing, be they frequencies, flight numbers or callsigns. I also use a tape recorder with a CD line-in socket. That way I can plug the scanner or HF radio into the tape recorder and record any interesting flights I may be tracking, which is also very handy.

To get the most out of your HF radio or scanner you should use a good quality outdoor antenna. For the HF band I use a longwire-style antenna about 30m long and about 6m off the ground. I also use some old plastic strips about 10cm long by 3cm wide at each end of the wire antenna as insulators. This insulates the antenna so we don't lose any of the received signal to earth.

I thread the antenna lead-in wire through an air vent into my radio room and then connect the antenna lead-in wire to the HF radio.

It is always better to have an outdoor antenna connected to the HF radio rather than just using the standard telescopic antenna on the radio.

If you can't put up a big long wire, try hanging some wire out a window and use that as an antenna.

Another must have is a good earth on the radio to help stop some of the nasty RFI (radio frequency interference) that our neighbours share with us. To install a good earth you need an old water pipe or the like about 25mm in diameter and about 2m long. Next you need to sink about 1.9m of the pipe into the ground outside your radio listening room. Once the pipe is in the ground, you should attach a 3mm diameter wire to the end

of your earth stake and feed the other end of the wire to your receiver.

It is always a good idea to have all your radio gear earthed, and when there is a thunderstorm near your location you should always disconnect the antenna and the earth for safety. I also recommend that you pour some salty water down the centre of the water pipe once a month to keep it moist so

you have a conductive ground around your earth stake.

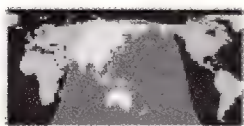
It is also a good idea to have an outdoor-style scanner antenna to get the most out of your scanner. Numerous good quality base station and mobile scanner antennas are available to suit all budgets. Check the *Mobile One* advert in the front of each issue of Radiomag for locations. If you have problems setting up a big base style scanner antenna a good alternative is to buy a gutter mount antenna clamp and clamp it to your household guttering and use a mobile style scanner antenna. This type of setup is much better than just using the standard hand held rubber ducky antenna.

Well that's enough for this month's 'getting started' column. Next month we will look at tracking an international airliner and lots more. 73 from Richard.

E-mail: onclimb@radiomag.com **R**







# broadcast monitor

By Bob Padula, OAM

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404 Mont Albert Rd, Surrey Hills, Victoria 3127

All times, days, and dates are in UTC. Add 10 hours for Eastern Standard Time, 9.5 hours for Central Standard Time, eight hours for Western Time, 12 hours for NZ Standard Time.

All frequencies are in kiloHertz (kHz); \*xxxx- denotes observed sign-on time; -xxxx\* denotes observed sign-off time; Au = Australia, Eu = Europe, Am = America, SEA = South East Asia, ME = Middle East, Af = Africa, NAm = North America, SAm = South America

**MINI-EDITORIAL.** Don't forget that your contributions for Broadcast Monitor are welcome, and may be E-mailed or postal-mailed to me at any time! If you would like to volunteer to be part of this column's "Broadcast Monitor" network, please let me know. If you would like to know what I did during my recent trip to Southern Thailand, please visit <http://www.worldisround.com/articles/2932/index.html>

The full story is there, with a photo-set of the highlights. The scenery was really spectacular!

**SPECIAL ARTICLES.** Many of my recent essays about shortwave broadcasting, and lots of other articles, are available for viewing or downloading (free) from the Web. The links are at the Shortwave Australia Web site at <http://members.tripod.com/~bpadula/SW.AUS/>

## WORLD REPORT

**JAPANESE PROGRAMS.** Our Japanese-speaking colleagues are concerned about the progressive dilution of SW broadcasting services. HCJB concluded its Japanese services earlier this year, as did Vatican Radio. Our friend Yusuke Kamimura, of Yokohama, says that he, and others, are now directing their attention to non-Japanese SW services. Yusuke had commented on this in a reception report for our EDXP segment over Radio Korea's Multiwave Feedback.

**DIGITAL RADIO MONDIALE (DRM).** Radio Netherlands has set up a special Web page to cover the latest news and schedules of DRM test transmissions. Currently, tests are from the Deutsche Welle transmitters at Sines (Portugal) and Jülich (Germany). The tests from Bonaire have still not started, due to con-

firmed awaited from the receiving locations about equipment readiness. The DRM page <http://www.rnw.nl/realradio/html/drm.html> also has links to the official DRM site, and other relevant articles and info.

The A-01 test schedule is: Mo-Fr 21,760 (Sines, 260 deg); 1100-1155 5975 (Jülich, 290); 1100-1200 15,440 (Sines, 30); 1200-1255 and 1330-1430 17,890 (Sines, 300).

\*\* Broadcasting with this new technology will officially begin at the next World Radio Conference in Venezuela in 2003. Until then, a number of tests and pilot projects are being introduced, beginning in 2002 in which interested listeners may participate. A first prototype receiver will be presented at the International Radio and TV Exhibition (IFA) in Berlin from August 25 to September 2, 2001. The air will give visitors an opportunity to experience the differences between analogue and digital technology.

The results of the initial test transmissions are available at <http://www.drm.org>. The audio quality is equivalent to UHF standards but without the typical reception disruptions, such as interference, fading or static. Listeners will not even need to know the actual frequency, as the receiver will automatically search for the best frequency of a tagged broadcaster! During use, the reception is constantly monitored and automatically switched to the best frequency.

(Adapted from an article by Deutsche Welle).

### Asia/Pacific

**AUSTRALIA.** The Australian Broadcasting Authority has approved the first two international broadcasting licenses (IBL) under new legislation covering international radio broadcasts from Australian territory. The IBLs have been granted to Christian Voice (Australia) Ltd, and HCJB Australia.

CV intends to broadcast via Cox Peninsula, providing a range of programs to audiences in South-east Asia, India and China, in Hindi, English, and Chinese languages.

HCJB proposes to broadcast from a purpose-built near Kununurra, covering South Asia, and the South Pacific, with a possible expansion to East and South-east Asia later.

Both IBLs have been granted after consultation with the Minister for Foreign Affairs on national interest considerations. The licenses are allocated under

section 121 of the Broadcasting Services Act 1992. The legislation gives the Government the option to issue formal warnings to a broadcaster and to revoke an international broadcasting license on national interest grounds should a service prove contentious at some future stage.

(Matt Francis, Canberra)

**CHINA.** For A-01, China Radio International has made innumerable frequency changes, with a massive movement to the 22 and 25 metre bands for local evening broadcasts.

Some recent observations made in Melbourne include:

11,630-X Russian 2000-2100; 11,650-X Mandarin 2000-2100; 11,660-X French \*1930-2227\*; 11,680-B Hungarian 2030-2100; 11,750-B French 2000-2100; 11,775-Z Hungarian 2030-2100; 11,810-U Italian 2030-2100 co-channel Amman; 11,850-J Polish 2030-2100 co-channel NHK; 11,870-B Mandarin 2000-2100; 11,945-Z Russian 2000-2100 co-channel Radio Portugal; 13,640-M \*2000-2130\* English co-channel DW-Nauen; 13,650-U \*1900-2130\* Romanian S. Croatian Bulgarian; 13,775-J Portuguese and Mandarin 1930-2100

B=Beijing, X=Xian, J=Jinhua, M=Mali, U=Urumqi, Z=Zhijiazhuang

The Mali relay of CRI is listed as follows for A-01:

7170 2300-2357 Mandarin, 0830-0857 Hausa; 9890 1300-1400 English; 11,735 1930-1957 Portuguese, 2000-2127 English; 11,970 1700-1727 Arabic, 1730-1757 Hausa; 11,975 2130-2227 French, 2230-2257 Mandarin; 13,640 2000-2127 English; 13,685 1300-1600 English, 1800-1827 Hausa, 1830-1927 Arabic, 1600-1700 Arabic; 15,125 1400-1600 English, 1700-1727 Swahili; 15,500 1930-1957 Portuguese, 2130-2227 French, 2230-2257 Mandarin; 15,550 1730-1757 Hausa, 1800-1827 Hausa, 1830-1927 Arabic; 17,880 1600-1700 Arabic

**INDONESIA.** The RRI Jakarta network has been altered and it can now be heard on 9680 and 15,125. The ID on 9680 is "RRI Jakarta Programa Lima" or "Pro Lima" instead of "Programa Nasional Dua". "Lima" means five in Indonesian. The ID on 15,125 is "RRI Jakarta Programa Tiga" or "Pro Tiga" instead of "Programa Nasional Satu". "Tiga" means three in Indonesian.



According to monitoring, the two frequencies are NOT in parallel, as 9680 has the "Kang Guru Radio English Show" at 1100 on Sundays, and 15,125 has news at 1100 (title not confirmed) and at 1400 ("Warta Berita Ibukota"). Also 15,125 is now 24 hours whilst 9680 signs off at 1300. (*Juichi Yamada, Tokyo, Japan*)

**SINGAPORE.** Radio Singapore International, Indonesian service, is now listed on their Web site at 1100-1400 on 9665 only, and was noted recently at sign-off at 1400. 7235 was heard carrying separate programming, apparently relay of the domestic station Warna in Malay, from before 1300 and past 1400, with phone-ins and mention of FM frequency 'sembilan-empat-dua' ie 94.2 MHz. The schedule for RSI Malay must have changed recently also, but the relevant web page has not been updated. (*Alan Davies, Malaysia*)

**MYANMAR.** Here is the monitored schedule of Radio Myanmar, Yangon, which I put together during my recent trip to southern Thailand:  
4725 0930-1430v Burmese dialects  
5985 0930-1000 Burmese  
7185 2300-0330; English 0200-0230  
9730 0330-0915; English 0700-0830

**NEW ZEALAND.** RNZI schedule May 6 to September 2:  
1650-1850 6095 Mo-Fr to NE Pacific, Cooks, Niue, Tonga, Samoa  
1851-1950 11,725 Daily Pacific  
1951-2215 15,160 Daily Pacific  
2216-0458 17,675 Daily Pacific  
0459-0705 11,725 Daily Pacific  
0706-1105 9885 Daily Pacific  
1106-1305 11,675 Daily NW Pacific, Bougainville, East Timor/Asia  
1305 Usual closedown  
1305-1650 6095 Occasional use for sports commentaries or cyclone weather reports

**PAKISTAN.** This report from Noel Green, United Kingdom: "I fear Radio Pakistan's equipment has seen better days. I often report frequency deviations noted, as well as the poor audio quality, and I get the impression that some action is taken, but there appears to be no permanent cure. The Karachi station is no longer listed, and questions about its future go unanswered. It would be nice to know a brand new transmitter(s) is being installed, but I doubt if the finance is available."

"There are no services specifically for Australasia, but you should be able to hear the World Service at 0045-0215 via 118 deg to SEAs (if you want to!) — all in Urdu as far as I know — and was when I managed to hear it recently at 0100. Also via 118 deg is the South Asia service on 15,455 at 0045-0315 (this has the Assami service at 0045-0115 which is in English) and again at 1000-1245 on 15,625. 11,650, parallel 15,455, 17,655, and 15,625 are via 147 deg."

And, there's Indonesian at 0900-0930 on 15,625 and 17,660 also via 118+12=130 deg (as listed)".

**SRI LANKA.** SLBC in Sinhala to ME for A-01 1610-1850 on NF 11,840. Good reception 'til 1630, when totally blocked by Voice of Islamic Republic of Iran, in Arabic. (*Radio Bulgaria Observer*)

## Survey of DXers

*From Jeff White, WRMI, Miami, Florida, USA.*

An interesting survey of Spanish-speaking shortwave radio listeners was conducted last year by a group of DX (ie radio listening) clubs in Europe and Latin America. Claudia Viazzo of the Suquia DX Group in Cordoba, Argentina compiled the results, which were released at the end of January 2001.

The sample in this survey was not extremely large; some 122 persons filled out the survey forms. But the demographic information is quite interesting. At least 12 per cent of the respondents said they were not members of any shortwave or DX club, but most of the participants in this survey were club members. This makes them among the more active radio listeners. In this article we use the terms "shortwave" and "DX" virtually interchangeably, as 96% of the respondents said they listen to shortwave radio.

Seventeen countries were represented in the survey. Over half of the respondents were from Latin America. However, the top five (in numbers of respondents) were Spain, Italy, Argentina, Mexico and the United States. The rest were from other Latin American countries, except for a few from the Czech Republic and France. Participants were from all age ranges, although about 59% were between 26 and 45 years of age. (Other surveys have shown that Latin American shortwave listeners tend to be younger than those in Europe and North America.)

As might be expected among a group of active shortwave listeners, the educational level was very high. Fifty-two percent had at least a partial university education, and another 21% had some form of higher education (above high-school level). Over half had been listening to shortwave radio for more than 15 years, but 15% had been listening for less than five years.

The most popular hobbies (other than radio listening) practiced by the survey group were stamp collecting, computers, sports and music. Those who are DX club members said they belong to the clubs primarily in order to get up-to-date information about radio stations, technical data and help from other members. Twenty-eight percent get DX information from the club newsletters, 23% from DX programs on the radio stations themselves, and 32% from the Internet and electronic DX bulletins. Perhaps surprisingly, less than 5% mentioned renowned reference books like the World Radio TV Handbook as their primary source of shortwave information.

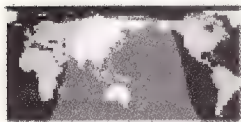
Fully 60% of the group thinks shortwave broadcasting will never stop being used, while another 20% thinks it will not stop being used for a long time yet.

The Spanish-language survey respondents said that listening to shortwave radio has given them more knowledge about culture, geography, tourism and technical subjects. Among the most popular brand names of receivers used by the group were Grundig, Icom, JRC, Kenwood, Panasonic, Radio Shack, Sangean, Sony and Yaesu. Almost 69% purchased their radios — either new or used — within their own country. About 18% bought their radio while travelling abroad, or had someone else buy it for them.

Forty-three percent said they will never abandon shortwave listening. Another 39% said they might set their shortwave radios aside for a time, but they will always come back to them. In order to promote international radio listening, respondents suggested such methods as publicity in the local media, schools, associations, the Internet and by word-of-mouth.

Finally, each respondent was asked to define "DXing" in his or her own words. The three most common definitions were variations of these: "the practice of listening to distant radio stations," "travelling by radio," and "a way of getting to know other cultures without leaving home." One respondent defined DXing as "a way to discover the existence of other ways of thinking and to understand life."





# broadcast monitor

**UZBEKISTAN.** Radio Tashkent's summer (A-01) schedule for English services is:

0100-0130 (As) 7190 9375 9530 9715  
1200-1230 (As) 7185 9715 15,295 17,775  
1330-1400 (As) 7285 9715 15,295 17,775  
2030-2100 (Eu) 9540 9545

## AFRICA

**SOUTH AFRICA.** Sentech is a commercial state-owned company providing broadcast signal distribution services to a large number of clients, both local and international.

It offers a full array of signal distribution technologies, through satellite and terrestrial systems. Radio technologies include AM on medium and short-wave, FM on VHF, and TV technologies on VHF and UHF, with both open and encrypted and services.

Sentech has its own satellite port. Intelsat transponders in C-Band are utilised mainly for network linking of TV and radio signals to regional input ports, using both analogue and digital transmissions. Ku-band satellite transmissions provide direct-to-home services offering a choice of TV and radio channels.

For A-01, SW transmissions from Sentech's Meyerton facility include broadcasts originating from Channel Africa, the BBC, African beacon, United Nations Radio, Adventist World Radio, Trans World radio, Radio France International, Radio Sonder Grense, Radio Lusofonia, and the South African Radio League.

The schedules include:

**RFI:** 0257-0359 5925 French  
**United Nations Radio** (Mo-Fr): 1700-1715 6125 French, 1700-1720 21,490 French and Portuguese, 1725-1745 6125 Portuguese and English  
**Radio Lusofonia:** 1800-1900 Sa, 1800-01915 Su 3345 various African languages  
**Radio Sonder Grense** (Afrikaans): 0500-0800 7185, 0800-1620 9650, 1620-0500 3320  
**South African Radio League** (English): 0800-0900 (Su) 9750 and 21560, 1800-1900 3215 (Mo)

## EUROPE/MIDDLE EAST

**ARMENIA.** Trans World Radio Europe uses a leased facility at Yerevan for broadcasts for Central Asia. For A-01, these transmissions are listed:

0030-0045 Kazakh 6240; 0045-0100 Korean 6240; 1610-1625 Korean 7295 and 5855; 1625-1640 English 5855; 1640-1655 Turkmenian and Kirghizian 5855; 1655-1710 Uzbek 5855; 1710-1740 Tajik 5855

**FINLAND.** Radio Finland services to Au/As for A-01 are:

0030-0115 11,990 Finnish; 0115-0130 13,785 Swedish; 0600-0630 15,135 21,670 Finnish; 0630-0700 15,135 21,670 Swedish; 0700-0800 21,670 Finnish Sa/Su; 0700-0830 15,135 Swedish; 0830-0900 17,615 17710 Russian; 0900-0945 21,810 Finnish; 0945-1000 21,810 Swedish; 1000-1200 21,810 Finnish; 2230-2300 13,785 Finnish (11,970 was used for a short time in parallel with 13,785 but has been deleted, due to severe co-channel jamming from China intended for the Central Broadcasting System, Taipei)

**GREECE.** For A-01, Voice of Greece transmissions to Australia are:

0400-0800 17,520 21,530; 0600-0800 11,900 (via Delano, California); 1200-1500 11,645; 2100-2250 9425 15,650; 2300-2359 15,650

Programming is mainly in Greek, but five-minute news summaries in English are at 0610 and 0750.

**IRAN.** For A-01 Voice of Islamic Republic of Iran, Tehran has introduced a vast array of new channels! Some recent observations at your writer's den in Melbourne are:

9535 Japanese \*2100; 9570 English \*2130 (to Australia); 9660 Bosnian 2215 9810 Bosnian 2215; 11,705 Japanese \*2100; 11,740 Pakistani dialects 2330; 11,840 Arabic 2050; 11,875 Hausa \*1930; 13,635 Japanese \*2100; 13,650 Italian 1930-2000; 13,730 French \*1830 (co-channel Radio Netherlands); 13,745 English \*2130 (to Australia); 15,235 Albanian \*0630; 15,490 Chinese \*2330; 15,570 Chinese \*2330; 17,560 Italian 0645; 17,570 French 0650; 17,590 French 0650; 17,600 Chinese \*2330; 17,605 Italian 0645; 21,520 Arabic \*0930 (to Australia); 21,545 Arabic \*0930 (to Australia)

**ISRAEL.** For A-01, Israel Radio International broadcasts in English for Australia 0400-0415 on 17,545. The station has introduced some unusual frequencies in the extended bands for its Domestic Service relay in Hebrew:

9390 0100-0500  
11,585 1600-0330  
11,590 0330-0500  
13,635 2100-0100  
15,640 1800-1850 and 2000-2115  
15,760 0500-1800  
17,535 0500-2100

**NETHERLANDS.** For A-01, services over Madagascar and Bonaire for non-Radio Netherlands broadcasters, are listed as: 0230-0330 3215 Madagascar (Adventist World Radio); 0300-0345 15,105 Bonaire (Deutsche Welle English); 0400-0500 15,565 Bonaire (Radio Vlaanderen International); 0430-0525 12,060 & 15,320 Madagascar (Voice of Hope)(Sa); 0500-0545 11,985 Bonaire (Deutsche Welle English); 0500-0600 17,740 Madagascar (Radio Canada International English); 0530-0625 11,655 Bonaire (DRM) (Mo-Fr); 0630-0755 15,245 Bonaire (DRM) (Mo-Fr); 0900-0945 17,800 Madagascar (Deutsche Welle English); 1430-1455 17,485 Madagascar (Democratic Voice of Burma); 1458-1525 17,485 Madagascar (International Broadcasting Corporation Tamil); 1530-1630 3215 Madagascar (Adventist World Radio); 1700-1755 7215 Madagascar (Voice of the People) (to Zimbabwe); 1730-1925 17,880 Bonaire (DRM) (Mo-Fr); 1800-1900 7195 Madagascar (Radio Vlaanderen International); 1930-2025 17,880 Bonaire (DRM); 2030-2125 15,455 Bonaire (DRM) (Mo-Fr); 2230-2326 15,565 Bonaire (Radio Vlaanderen International); 2330-0030 11,590 Madagascar (Democratic Voice of Burma); 2330-0026 15,565 Bonaire Radio Vlaanderen International

**NORWAY.** The Voice of Tibet, with studios in Norway, uses relay facilities in Kazakhstan and Tajikistan for programming in Tibetan and Chinese. The A-01 schedule is: 1215-1300 15,685 (alt: 15,705) Almaty; 15,645 (alt: 15,655) Dushanbe; 2315-2359 7180 Dushanbe; 0100-0145 9920 Dushanbe

**PORTUGAL.** RDP uses two transmitter sites in Portugal — Sao Gabriel and Sines. The latter is the Radio Trans Europe facility, operated by Deutsche Welle. For A01, RDP via Sines is: 0645-0800 11,850 to Eur (Mo-Fr); 0830-1000 11,995 to Eu (Sa/Su)

RDP is using these channels in the 22 mb for A-01: 13,640 0700-1355 Eu (Sa/Su); 13,660 2300-0200 SAm (Mo-Fr); 13,700 2300-0200 SAm (Mo-Fr); 13,720 1900-2200 Eu (Sa/Su); 13,720 1900-2300 Eu (Mo-Fr); 13,770 1400-2000 Eu (Sa/Su)

**ROMANIA.** The A-01 schedule for Radio Romania International, to Au/As is: 0200-0300 15,105 17,735 English Japan; 0200-0300 17,790 English NZ;



0400-0500 17,735 21,480 English India;  
0500-0600 15,250 17,805 21,480  
Romanian Au/NZ

**RUSSIA.** The Voice of Russia continues to use the Vatican Radio relay for A-01. This is a single 30-minute daily transmission in French, 2100-2130, on 9495, intended for North and West Africa.

VOR also uses a relay in China, on 11,500, from Xian, for its English service to S. Asia, 1500-1557, daily. This is not the only Chinese relays used by VOR — it runs on medium-wave 1269 (Kunming) in Hindi 1300-1400, 603 (Guangdong) Vietnamese 1200-1300, and 1269 (Kunming) English 1400-1500 and 1700-1757.

**TURKEY.** For A-01, Voice of Turkey broadcasts to Australia are:

7170 2030-2130 English; 9560 200-0000 Turkish; 21,715 0300-0400 English; 21,715 0400-1200 Turkish; 17,715 1200-1300 Urdu (!); 13,665 1200-1600 Turkish; 17,810 1230-1330 English

Some new freqs include: 7190 English 2200-2300; 11,845 English 2200-2300; 11,910 Turkish 0650; 17,580 Turkish 0655; 17,690 Turkish 0650

**VATICAN.** For A-01, Vatican Radio uses these overseas relays: 12,055 Irkutsk (Russia) 1315-1400 Vietnamese; 6210 Tashkent (Uzbekistan) 1610-1540 Russian and Ukrainian; 12,065 Tashkent (Uzbekistan) 1450-1620 Hindi, Tamil, Malayalam, English; 6020 Puge, Philippines (Radio Veritas Asia) 1225-1315 Chinese. Unless the perceived electromagnetic/environmental problems at the Santa Maria di Galeria site (25 km north of Rome) are resolved, it would not be unreasonable to suggest that other overseas relays may be introduced.

## AMERICAS

**PALAU.** There had been speculation recently about the situation with the SW facility at Palau, operating as KHBN.

Until late 2000, KHBN was owned by the High Adventure Ministries organisation, under the "Voice of Hope" banner, providing services to Asia in English, Mandarin, Vietnamese, Korean and Japanese. Three transmitters are available, each running 50 kW.

In early 2001, a joint partnership was established with the Chinese Church in Hong Kong, whereby High Adventure Ministries retained the license, but programming and operations were to be transferred to the Chinese Church. Some programming from High Adventure was to be retained.

For some time, High Adventure had leased some of its transmitter capacity to the IBB, for Radio Free Asia programming.

For the current A-01 season there has been an increase in the volume of RFA output from Palau, believed to have been negotiated between IBB and the new joint partnership. There has been a corresponding reduction in non-RFA programming.

For A-01, frequency usage for Palau is as follows: 9905 RFA 1500-1800, 1900-2200 Mandarin; 9930 RFA 2230-2330 Khmere; 9930 RFA 2330-0030 Vietnamese; 9955 RFA 2200-2300 Cantonese; 9965 HiAdv 1030-1500 Mandarin; 11,770 RFA 2300-2359 Mandarin; 11,815 RFA 1800-2200 Mandarin; 13,755 RFA 2300-2359 Mandarin; 13,775 RFA 1400-1500 Vietnamese; 15,355 RFA 2000-2200 Mandarin; 15,520 RFA 1600-1800 Mandarin; 15,545 RFA 1100-1400 Tibetan; 15,585 RFA 1500-1600 Mandarin; 15,725 HiAdv 0900-1100 Mandarin; 17,675 RFA 1500-2000 Mandarin; 21,690 RFA 0600-0700 Tibetan

The above schedule indicates that there are no operations between 0700-0900, nor between 0030-0600, either for RFA or Church/Ministry programs.

High Adventure no longer shows the Palau facility in its promotional material. It has restructured its global operations, with various "Beacons":

Americas beacon (KVOH, California); African beacon (VHF-FM from West Africa); China, India, Middle East, West Europe and Europea/Russia beacons (all from Jülich, West Germany.) Refer to <http://www.highadventure.org>

**USA.** Radio Free Asia — the amended schedule for A-01 shows Yerevan transmitters in use for Tibetan broadcasts as: 9365 2300-2359, 0100-0300, 11,590 1100-1400 and 11,510 1500-1600.

• The University Network, hosted by Dr Gene Scott, and carrying English religious features, is now noted on the new channel of 9825 (replacing 9940) from the Russia relay. This is presumed to be via Samara. Good signals here in Melbourne 2000-2200 and later. This is the same transmitter used on 17,645, from opening at 0300. Actually, 17,645 switches on at 0245 with the usual audio line-up tones, and good level here in Melbourne. Full schedule is 1600-0200 9825, and 0300-1600 17,645.

## Domestic shortwave report

My colleague Anker Petersen, Denmark, who compiles the annual Domestic Broadcasting Survey (DBS) of the Danish SW Club International, maintains comprehensive statistics of domestic SW broadcasting. He mentioned to me that his latest analysis shows a reduction of nearly 20% in the number of SW stations worldwide used for domestic cover-

age, and this trend follows from recent years' summaries.

It is obvious that the availability, cost effectiveness, and efficiency of new distribution technologies are now being seen as key parameters for organisations which had previously limited their regional coverage to SW. Furthermore, many broadcasters, particularly in Asia and the Pacific, are no longer committing funds for replacement or repairs of antiquated SW domestic facilities dedicated to domestic output. During my recent trips into Asia (Vietnam, Malaysia, Singapore and Thailand), I noted little interest by local communities in shortwave broadcasting in any form. Even in rural regions, it was commonplace to see small satellite dishes in the most unlikely places — in remote villages, atop thatched houses in the jungle, and of course in the hotels and national park lodges!

Medium-wave and VHF is now the most popular form of distribution of radio entertainment across most of Asia, with SW contracting rapidly. Much the same kind of profile is evident in the Americas and Africa, where local SW transmissions are being replaced by MW and VHF. In South America especially, SW domestic broadcasting is sustained only by stations whilst the equipment functions: when it fails, that's it!



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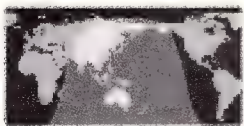
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# broadcast monitor

Closer to home, the NBC in Papua New Guinea is moving along a path to eventually replace all of its SW facilities with VHF-FM services, offering more reliable local and regional coverage than HF.

It is evident that this trend will continue, with fewer and fewer stations using SW for local broadcasting. Gone are the days when we could expect to hear the 60 mb, alive with Latin American signals during our afternoons and evenings, or of African signals during our mornings. I can still hear those stations, but only on the enormous collection of reel/reel tapes I had made since the 1960s, and my collection of some 8000 QSLs brings back vivid memories.

What follows is a summary of interesting Domestic SW items reported by our correspondents around the world. On the lower frequencies, propagation is possible into Australia and NZ where a darkness, or predominantly darkness, path exists over most of the transmission path.

**ANTARCTICA (ARGENTINE).** For the southern winter period, Radio Nacional Arcangel San Gabriel, Base Esperanza, LRA36, on 15,476, has been

reactivated. Its schedule is Mo-Fr 1800-2100, Sa/Su no transmissions. Power: 4 kW. E-mail: [lra36@infovia.com.ar](mailto:lra36@infovia.com.ar) (Gabriel Ivan Barrera, Buenos Aires, Argentina)

**BOLIVIA.** Radio Pio XII, 5953, 1040 with news. Radio Illimani, 6025, "La Voz de Bolivia", La Paz, 1025-1033, with promo for "Fiesta Dominical Tricolor". Radio Fides, La Paz, 6025, 1055-1101 with local music. (All from Arnaldo Slaen, Argentina)

**INDONESIA.** RRI, Jakarta 15,125, 1230 with jingle and apparently pre-recorded announcement "Anda sedang mengikuti siaran Pro-Tiga RRI Jakarta" (as heard), ie. "You're listening to the Pro-3 broadcast of RRI Jakarta", then the following list of frequencies: FM 104.05, MW 1332, SW 9565, 9630, 11,760, 11,860, 15,125.

15,125 was the only shortwave frequency audible, and I suspect the others are wishful thinking. The RRI 11 MHz domestic channel formerly on 11,860 changing to 11,760 around 0100 has recently disappeared. 9680 was in parallel

with the main news bulletin until 1230, then with separate programming but very difficult to hear under co-channel BBC IS and Thai from 1232. It appeared to go off around 1255, leaving BBC Indonesian in the clear at 1300. (Alan Davies, Malaysia)

**JAPAN.** NSB 2, Radio Tampa, Tokyo, 6115 2345-2355, Japanese folk songs and talks, parallel with weaker 3945. (Anker Petersen, Denmark)

**PAKISTAN.** Radio Pakistan's special News and Current Affairs Channel was inaugurated in April of this year, from Islamabad. It operates: 1225-1800 daily on 7265 and 7365 and is relayed by various other regional stations.

**PHILIPPINES.** Radio Veritas Asia, Palauig, 9535, \*1425-1435, Interval signal, English announcement, 1430 Asian vernacular on this new schedule, religious program. (Anker Petersen, Denmark)

**URUGUAY.** SODRE, Montevideo, 6125, 1245-1305, with ID and news. (Arnaldo Slaen, Argentina)

**R**

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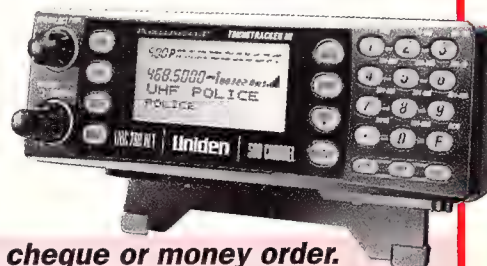


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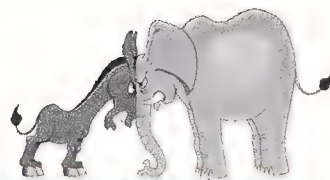
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# CONTESTS

By Ian Godsil, VK3VP  
contests@radiomag.com



## Contest Calendar September - November 2001

Sep 1	CCCC PSK31 Contest
Sep 1/2	All Asian DX Contest (SSB)
Sep 8/9	Worked All Europe DX Contest (SSB)
Sep 16	FM Funday (FM Simplex) (Sep 01)
Sep 15/16	Scandinavian Activity Contest (CW)
Sep 22/23	CQ/RJ WW RTTY DX Contest
Sep 22/23	Scandinavian Activity Contest (SSB)
Oct 6/7	Oceania DX Contest (SSB) (Sep 01)
Oct 6	European Sprint (SSB)
Oct 13	European Sprint (CW)
Oct 13/14	Oceania DX Contest (CW) (Sep 01)
Oct 21	Asia-Pacific Sprint (CW)
Oct 20/21	JARTS WW RTTY Contest
Nov 1-7	HA-QRP Contest
Nov 4	High Speed Club CW Contest
Nov 9-11	Japan International DX Contest (SSB)
Nov 10-11	WAE RTTY Contest
Nov 10-11	OK/OM DX Contest (CW)
Nov 17-18	LZ DX Contest (CW)
Nov 17-18	All Austrian 160m DX Contest (CW)
Nov 17-18	IARU 160m Contest (CW)
Nov 24-25	CQ WW DX Contest (CW)
Nov 24-25	CQ WW SWL Challenge (CW)
Nov 30-2	ARRL 160m Contest (CW)

Greetings to all contestants and readers! I hope that your Winter contesting went well and that your station met the challenge without any trouble.

During June a survey of most-used contest logging software was held via the Internet. It was interesting to receive the following summary of results — CT: 108 votes; SD: 107; TRlog: 72; Writelog: 48; NA: 3.

The full results may be viewed at <http://www.435dxn.org>

I was amazed at how many different programs were listed for voting (over 40 it seemed), but not surprised that the popular 'big three' came out on top. As a user of SD (Super Duper by Paul O'Kane, EI5DI) myself, I can assure readers that it is an excellent program which supports not only many fixed international contests, but has variable areas built in for use with other events. I have used mine for several VK and ZL events this year.

I can also record that the support by the author is superb in that he quickly answers any questions that may arise, that he is constantly alive to requests for expansion of the program and that there is a friendly user group readily available for help with any thoughts. A trial version is available at <http://www.ei5di.com/>

## New Contest

I was most interested to receive information about the new **FM Funday**, the details of which appear below. Even though this is for VK2, it is an excellent idea and I commend it to other clubs. Let's face it, there is not huge interest in the world-wide contests in this country and something of a regional nature may be just what is needed to stimulate local interest and 'have fun'.

Certainly, such an event need not carry the pressure of the traditional contest to make your contact and get off to find another.

Instead, there would be room for a chat to someone that you may not have heard for a while, as well as giving numbers. Please consider this type of activity for your Club, perhaps in conjunction with a field trip or special day relevant to your area/Club/State etc.

## Oceania DX Time Again

October will bring the annual Oceania DX Contest. Last year there was a great effort to revitalise this event and the results were most impressive to say the least. Under the Chairmanship of Brian Miller ZL1AZE and a very hard-working committee, your participation on either or both of the first two weekends in October is invited. Please make a note of the dates and times and plan now to join in to represent our VK/ZL areas to the world.

## Finally...

... a reminder not to delay sending in your RD logs. We need every log from every participant to make this as widespread and fair as possible.

... having done that, check that everything is ready for the **OCEANIA DX CONTEST** (see dates and rules below).

Good contesting and 73 de Ian, VK3VP

## Results

### Sangster Shield

from Stan White ZL2ST

(This is a ZL QRP contest held in June each year)

1st	ZL1PC Paul	21,862 points
2nd	ZL1ALZ John	19,376 points
3rd	ZL1AIH Ken	18,394 points
1st place VK section	VK3VP/QRP Ian	1380 points

### QRP Day 2001

From Ron Everingham, VK4EV Contest Manager

Place	Call	Name	Score
1	VK3VP/QRP*	Ian	198 points
2	VK5NJ/QRP	John	51 points
3	VK3LK/QRP*	Adrian	34 points
4	VK2KET/QRP*	Alex	12 points
5	VK4SN/QRP		11 points
=6	VK5BLS/QRP*	Barry	8 points
=6	VK3YE/QRP	Peter	8 points

\* Denotes Station used Home Brew equipment.

### Manager's Comment:

Thanks again to all who took part in this year's contest and special mention to the top scorers for such terrific results. Conditions on the day were not favourable for QRP (in VK4) due to storm activity in Western Queensland. 80m and 40m were very noisy here on the night. It is pleasing to read the logs and note the various types of home-brewed equipment. Keep up the good work.

73 de Ron VK4EV #130



# CONTESTS

## Rules

### FM Funday Contest

From Roger Cooper VK2TEA

**Date:** Sunday, 16 September, 2001

**Object:** To work as many stations as possible using FM simplex in the appropriate portions of the 6m, 2m and 70 cm bands.

**Region:** VK2 originating stations. Contacts from outside VK2 are allowed, provided that the originating station is within VK2.

**Time:** Morning, Afternoon and Evening sessions commencing at 1100 hours, 1400 hours and 1900 hours EST. Contest will finish at 2359 hours EST.

**Bands:** 6m, 2m and 70 cm bands.

**Modes:** FM simplex only. No repeater contacts permitted.

**Categories:** Single operator; multi-operator. Multi-op. stations must enter under one callsign.

**Sections:** 1) Low Power (five watts or less); 2) High Power (six watts or more).

**Exchange:** Callsign; time; RS; serial number starting at 001 and incrementing by one for each contact. Stations may be logged once per band in each session.

**Score:** One point per contact. No multipliers. Send summary only of all sessions that you have entered.

**Logs** will be called from those entries that look like winning something(!).

**Send to:** Roger Cooper VK2TEA, PO Box 50, Woodford, 2778 or by E-mail to: rogerco@ozemail.com.au by 16 October, 2001. Local stations may call in their entries on the 146.450 MHz Net most nights between 1930-2030 hours EST. Certificates will be issued for first three place-getters in each session and all day in both sections and categories. Winners notified by 1 November, 2001.

**Web site:** <http://members.ozemail.com.au/~rogerco/fmfunday.html>

### 2001 Oceania DX Contest

From Brian Miller, ZL1AZE

Chair of Oceania DX Contest Committee

#### 1. Special Notes for the 2001 Contest:

- The start time has been brought forward to 0800 UTC (2001 rule change)
- Multi-Operator Single-Transmitter category added and Multi-Operator Single Band category deleted (2001 rule change)
- Contacts between stations in the same Oceania country are permitted (2000 rule change)
- The 160m band is included (2000 rule change)
- Electronic logs are encouraged — preferably in the CABRILLO format (2001 rule change)
- Further information on the contest is available from the Oceania DX Contest web site at <http://www.nzart.org.nz/nzart/update/contests/oceania/>

2. The aim of the contest is to promote HF contacts with stations in the Oceania region (VK, ZL, Pacific Islands and other locations within the IARU 'Worked All Continents' Oceania boundary).

#### 3. Contest periods:

**PHONE Contest:** 0800 UTC Saturday 6 October to 0800 UTC Sunday 7 October;

**CW Contest:** 0800 UTC Saturday 13 October to 0800 UTC Sunday 14 October

#### 4. The object is for

- Oceania transmitting stations to contact as many stations as possible both inside and outside the Oceania region.

- Non-Oceania transmitting stations to contact as many stations as possible inside the Oceania region. Contacts from 'one non-Oceania to another non-Oceania' station are NOT permitted for scoring.

- Oceania receiving (SWL) stations to hear as many stations as possible both inside and outside the Oceania region.

- Non-Oceania receiving (SWL) stations to hear as many stations as possible inside the Oceania region. Logging of non-Oceania stations is NOT permitted for scoring.

5. **Bands:** 160-10m (no WARC bands).

#### 6. Entry categories:

- **SOAB** - Single Operator All Bands. Single operator stations are where one person performs all operating, logging and spotting functions. Only one transmitted signal is allowed at any time.

- **SOSB** - Single Operator Single Band. Same as SOAB except that operation is confined to a single band.

- **MOST** - Multi-Operator Single-Transmitter All Bands. Only one transmitter and one band permitted during the same time period (defined as 10 minutes). Exception: One — and only one — other band may be used during any 10-minute period if, and only if, the station worked is a new multiplier. Logs found in violation of the 10-minute rule will be automatically reclassified as MOMT.

- **MOMT** - Multi-Operator Multi-Transmitter All Bands. No limit to transmitters, but only one signal and running station allowed per band. Note: All transmitters and receivers must be located within a 500-metre diameter area or within property limits of the station licensee, whichever is greater. All operation must take place from the same operating site.

- **SWL** - Short Wave Listener (Receive Only) All Bands. The same callsign for the 'station being worked' must not appear more than once in any group of three consecutive log entries.

7. **Exchange:** RS(T) report plus a three or four digit number starting at 001 and incrementing by one for each contact. MOMT entries may use a separate serial number sequence for each band.

8. **Multiplier:** The multiplier is the number of different prefixes worked. Note that the same prefix may be counted once on each band for multiplier credit.

A prefix is the letter/numeral combination that forms the first part of the amateur call — the same as the CQ WPX contest definition.

Examples of valid prefixes are N8, W8, WD8, HG1, HG19, KC2, OE2, OE25, etc. Any difference in the numbering, lettering, or order of the same shall constitute a separate prefix. A station operating from a DXCC country different from that indicated by its callsign is required to sign portable. The portable prefix must be an authorised prefix of the country/call area of operation. In cases of portable operation, the portable designator will then become the prefix. Example: N8BJQ operating from Wake Island would sign N8BJQ/KH9 or N8BJQ/NH9. KH6XXX operating from Ohio must use an authorised prefix for the US 8th district (W8, K8, etc). Portable designators without numbers will be assigned a zero (Ø) after the second letter of the portable designator to form the prefix. Example: N8BJQ/PA would become PAØ. All calls without numbers will be assigned a zero (Ø) after the first two letters to form the prefix. Example: XEFTJW would count as XEØ. Maritime mobile, mobile, /A, /E, /J, /P, or interim license class identifiers do not count as prefixes.



Special event, commemorative, and other unique prefix stations are encouraged to participate. Prefixes must be assigned by the licensing authority of the country of operation.

9. **Contact points:** All entries score 20 points per contact on 160m; ten points on 80m; five points on 40m; one point on 20m; two points on 15m; and three points on 10m. Note that the same station may only be counted once on each band for contact points credit.

10. **The final score** is the sum of the contact points multiplied by the multiplier (total number of prefixes worked), ie SOAB, MOST, MOMT and SWL score = sum of contact points from all bands multiplied by the total number of prefixes worked on all bands (remember that the same prefix can be counted once on each band). SOSB score = sum of contact points on the band multiplied by the total number of prefixes worked on that band.

#### 11. General log requirements:

SOAB, SOSB, MOST and MOMT entries are to submit a log showing the following details for each contact: date, time in UTC, callsign of station worked, RS(T) and serial number sent, RS(T) and serial number received, contact points claimed and new multiplier prefixes.

SWL entries are to submit a log showing the following details for each contact: date, time in UTC, callsign of 'station heard', callsign of 'station being worked', RS(T) and serial number sent by the heard station, contact points claimed and new multiplier prefixes. Note that the same callsign may appear only once in any group of three consecutive entries in the 'station being worked' column.

Multiplier prefixes should only be entered the FIRST TIME that they are worked on each band.

SOAB, SOSB, MOST and SWL logs must be submitted in date/time order. MOMT logs must be grouped by band and then in date/time order.

All logs must be checked for duplicates, correct Contact Points and Multiplier prefixes. The log must be accompanied by an alpha/numeric checklist of claimed multiplier prefixes worked on each band. Duplicate contacts must be clearly shown. DO NOT delete duplicate contacts.

#### 12. Summary sheet requirements:

The log must be accompanied by a Summary Sheet that clearly states:

- The station's callsign
- Operator name/s and callsign/s
- Entrant's name and mailing address
- Mode and Category entered
- Contact points claimed on each band
- Number of multiplier prefixes claimed on each band
- Total claimed score
- A declaration that all contest rules and radio regulations have been observed.

Examples of log and summary sheets can be viewed and downloaded from the Oceania DX Contest web site.

13. **Electronic logs** are encouraged and are required from those who use a computer to record or prepare the logs.

The CABRILLO format is preferred. Please ensure that you fill out all of the header information including your club affiliation. If you submit a CABRILLO log, no additional summary sheet or alpha/numeric check list of multiplier prefixes is required. Also there is no need to identify the contact points claimed or new multiplier prefixes for individual contacts. See the Oceania DX Contest web site for more information about the Cabrillo format.

If you cannot submit a CABRILLO log, then you may submit the ASCII output from most of the popular logging programs such as TR, CT, NA, Writelog etc. In this case a separate summary

sheet and alpha/numeric checklist of multiplier prefixes is required.

Please name your files with the station's callsign and the file type. Example: ZL2WB submits a CABRILLO file, it should be named ZL2WB.CBR. If ZL2WB chose to submit a non-CABRILLO file such as CT's .ALL file, then the log file should be ZL2WB.ALL and the summary file should be ZL2WB.SUM.

The file/s are to be preferably submitted as an E-mail attachment to [phocetest@nzart.org.nz](mailto:phocetest@nzart.org.nz) (for PHONE entries) or [cwoctest@nzart.org.nz](mailto:cwoctest@nzart.org.nz) (for CW entries). The station's callsign and mode (PHONE or CW) must be stated in the email subject line. Alternatively the file/s can be saved on a 3.5-inch diskette and mailed to

Oceania DX Contest, c/o Wellington Amateur Radio Club Inc, PO Box 6464, Wellington 6030, New Zealand. In this case, the station's callsign and mode (PHONE or CW) must be stated on the front of the package.

#### 14. Paper logs:

Official log and summary sheets can be downloaded from the Oceania DX Contest web site or obtained by sending a 'Self Addressed and Stamped Envelope' to the address below with sufficient postage. If official forms are not available then you may make your own in accordance with the general requirements above.

Paper logs are to be sent to Oceania DX Contest, c/o Wellington Amateur Radio Club Inc, PO Box 6464, Wellington 6030, New Zealand. Please use airmail if you are submitting a log from outside VK or ZL.

15. **Deadline:** All logs must be E-mailed or postmarked NO LATER than 26 November 2001. The reception of logs will be confirmed via E-mail (for E-mail submissions) and posted on the Oceania DX Contest web site.

16. **Awards:** Certificates will be awarded to the top-scoring station in each category listed under Section 6 for each IARU WAC continent and each country. In addition the following trophies are available:

- The Frank Hine VK2QL Memorial Trophy: awarded to the VK SOAB CW entrant with the highest score. The recipient receives an attractive wall plaque for permanent recognition of the achievement.
- The Ron Wills ZL2TT Memorial Cup: awarded to the Oceania SOAB PHONE entrant with the highest score. The recipient receives a miniature cup for permanent recognition of the achievement.

Additional awards may also be given at the discretion of the Contest Committee.

17. **Disqualification:** Violation of the contest rules, unsporting conduct, taking credit for excessive duplicate contacts, unverifiable contacts or multipliers will be deemed sufficient cause for disqualification. The use of non-amateur means such as telephones or E-mail, or the use of packet, to solicit contacts during the contest is unsporting and the entry is subject to disqualification. Note that any entry may be disqualified if the overall score is reduced by more than five per cent. Score reductions do not include correction of arithmetic errors.

In matters of dispute, the actions and decisions of the Contest Committee are final.

#### 18. Further information:

The latest information about the contest will be published on the Oceania DX Contest Web site at <http://www.nzart.org.nz/nzart/update/contests/oceania/>.

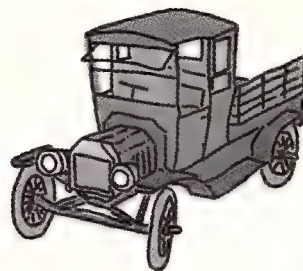
Inquiries can be E-mailed to [occtest@nzart.org.nz](mailto:occtest@nzart.org.nz) or posted to Oceania DX Contest, c/o Wellington Amateur Radio Club Inc., PO Box 6464, Wellington 6030, New Zealand. **R**

## Tip of the Month

*Be very careful to check your log before sending it in. Even though most Managers use computerised log checking, do not rely on the Contest Manager's computer; it is up to us to see that everything is right when we send our logs off.*



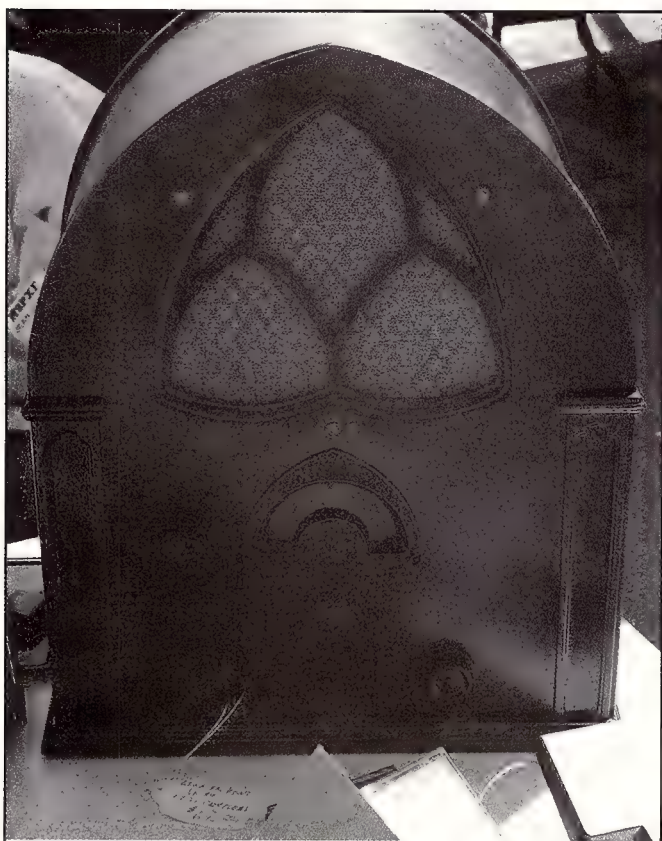
# vintage radio



By Roger Johnson, VK5ZKP E-mail [vintage@radiomag.com](mailto:vintage@radiomag.com)

## Atwater Kent radios... and getting them going

*Although Atwater Kent's radios have been covered in this column twice before, there is still much to tell. After all, he was for a time, the world's largest single manufacturer of radios...*



One of many AK "Cathedrals" spotted at Dayton.

Atwater Kent has reached almost cult status in the United States. Books have been written about the man himself, as well as about his radios and, indeed, there is a website devoted exclusively to the radios themselves. His radios now command quite high prices, as anyone who has spent many an hour wishing and hoping on 'eBay' can surely attest. Just why is somewhat of an enigma.

His radios were not cheap when they were new, and were not technically brilliant, but they were certainly very well made, and had that most illusive quality of all, namely 'style'. Perhaps it is this quality that makes them so attractive.

The AKs that were sold in this country are possibly the model 20 (three dial 5 tube compact) and also possibly the battery models type 30, 32, 33, but certainly the model 35 'bathtub' and battery models type 48 and 49. In the electric range were the models 37, 38, 40, 42, 44 and 55.

Unlike New Zealand, Australia introduced tariff policies to protect our local manufacturers in 1930, and we did not see the much sought-after 'cathedrals' which grace the shores of our trans-Tasman neighbour.

The models 35, 48 and 49, and the electric models mentioned above, have been seen in advertisements of the late 1920s. Enough model 20s have been seen to suggest that a few were introduced prior to the subsequent model numbers, all of which were single dial, and incorporated ganged tuning of either three or four tuned stages.

With the advent of 'eBay' on-line auction house, these radios are making their way to Australia (and presumably New Zealand). The battery sets are reasonable propositions, but when it comes to electric sets, anyone contemplating purchasing such a radio should be mindful that they are intended for 117v 60 Hz mains voltage.

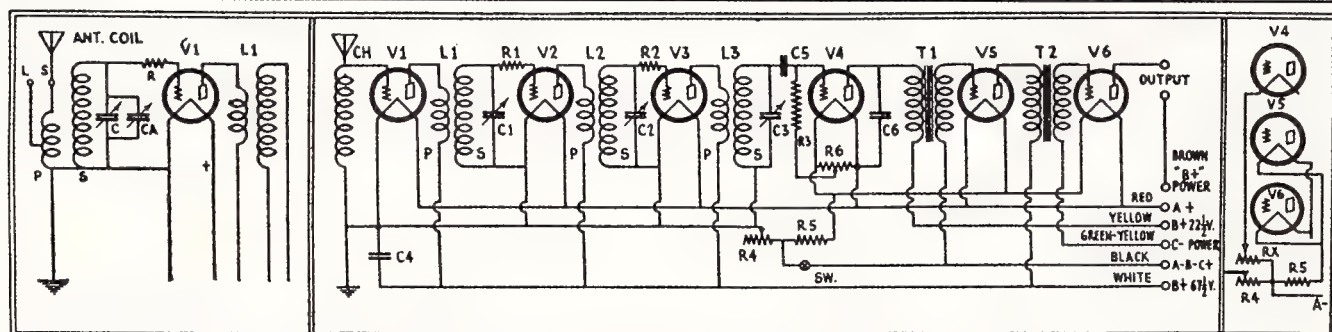


Figure 1. This circuit is good for most of the AK battery sets



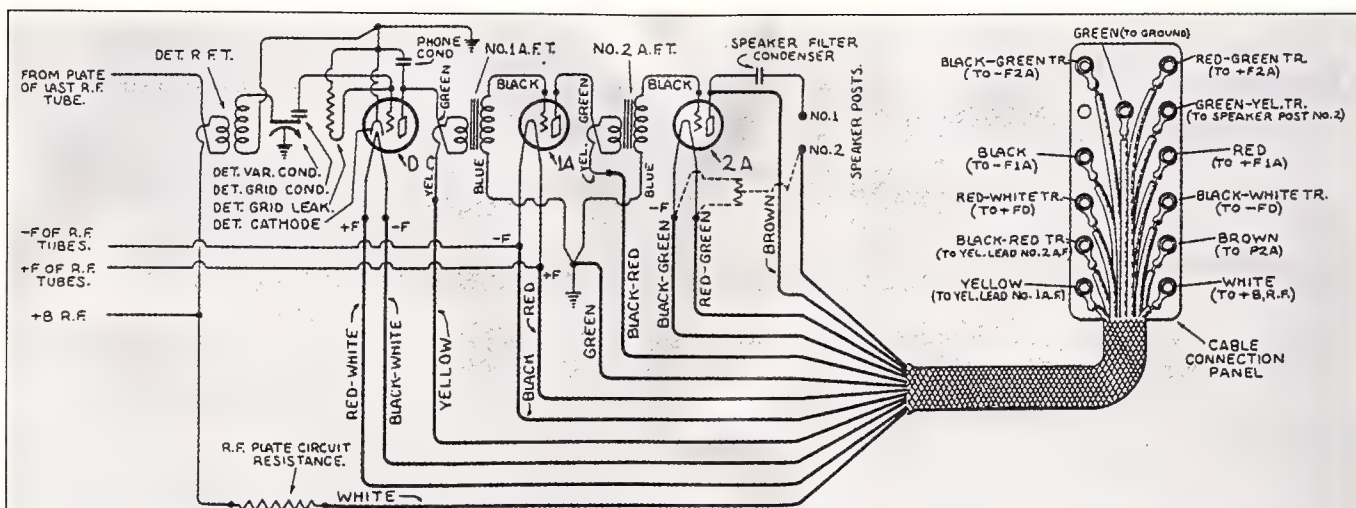


FIG. 78. DETECTOR AND TWO STAGE AUDIO FREQUENCY AMPLIFYING CIRCUIT USED IN LATER MODEL 36, AND IN MODELS 37, 38, 40, 42, 44 AND 52

The 2nd A. F. filament shunt resistance (shown in dotted lines) is used in all Model 36 sets and in many Models 37 and 38. In later Models 37 and 38, and in Models 40, 42, 44 and 52, this resistance is not used in the set, but the 2nd A. F. filament shunt resistance in the power unit is used for the same purpose, a green-yellow tracer lead connecting speaker post No. 2 to the centre tap of the 2nd A. F. filament shunt resistance in the power unit. In Model 36, and in Model 37 console sets, the two terminals on either side of the ground eyelet are used for toggle switch connection in the 110 volt line. In some Model 36 sets a green-yellow tracer lead is used instead of a black-red tracer lead for connection to the yellow lead of the 2nd A. F. T. The R. F. plate circuit resistance is not used in Model 36 nor in some 37 and 38 sets. Except for these minor variations, this circuit is standard in these sets, and the service man should remember the color scheme of A. F. transformers and the colors of cable leads and their location on the connection panel.

### The circuits

Reproduced in Figure 1 opposite is the circuit for most of the battery models excepting the model 20. There are two versions of the model 30 (early and late) in which the early models had tuning capacitors and coils very much like the model 20, except the capacitors were ganged for single dial tuning. The later model had coil arrangements like the others mentioned. Each of the three models had six tubes, with an untuned antenna stage ahead of the first tuned stage. This was done to isolate the antenna from the first tuned stage and to therefore eliminate any antenna de-tuning effect.

The model 35 'bathtub' has only one filament rheostat which controls the gain (and hence the stability) of the tuned stages.

AK was notorious for not declaring the values of the components used. Instead everything was referred to by part number, and one has to then dig out the factory literature to assign actual values to the part numbers. The model 32 has seven tubes, comprising of an additional tuned RF stage.

The models 33 and 49 also have six tubes, but have four tuned stages and no isolating antenna stage. Instead, a trimmer is included in the first stage to allow for fine tuning of that stage. Models 48 and 49 were only re-releases of model 30 and 33 respectively in 1928, and had a slightly different coloured front panel (a more gold than brown). The coils in the four tuned stage models, both battery and electric, are the 'binocular' type, so designed to reduce inter-coil coupling.

### Component values and tube types

Many enthusiasts automatically assume that the entire tube complement was 201-As. This is not correct. The output tube is listed as a type 112-A, which is the output stage specifically designed to complement the 201-A.

The filament voltage and current remain the same, and it requires -9.0 volts at 120 volts HT to give 130 mW of raw audio power (you know, enough to blast you to the other side of the room).

If you really want to get carried away, the alternative output type is the 117-A, which is actually mentioned in the literature, (the filament current and voltage being the same) and would require -22.5 volts bias for 120 volts HT.

As for the remaining component values, the table in Figure 2 should answer most problems.

The detector grid bias resistor is 450 ohms tapped at 180 ohms toward the positive end. The resistor in the filaments to the last two tubes is actually the connecting wire between the rheostat assembly and the tube sockets, and is variously 1.0 to 1.5 ohms per the table in Figure 2.

### The electric sets

The very first electric set is the lesser-known model 36, which is almost identical to the wooden box battery sets with provision for electric valves, and has a huge power loom and terminal panel appearing out the back. The metal box electric sets used many of the same components as the battery counterparts, such as the tuning gangs, coils, chassis sub-assembly, bakelite valve socket strips and audio transformers.

The power supplies were contained in a separate box within, and included the output choke, the power transformer, the filter chokes, voltage dropping resistors and filter and bypass capacitors. The circuit for the power supply is shown at Figure 3, and all contained in a small metal box filled with pitch. More on the power supplies later.

The electric sets sold in Australia were obviously designated export models with power packs designed for 240v 50 Hz. However, there appears to be no mention of these variants in the factory literature.

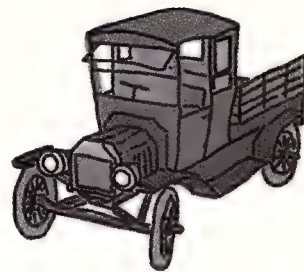
In Australia (and presumably New Zealand) the electric sets were 240 volt TRFs with 6/7 tubes and the antenna isolating stage and three tuned circuits (models 37, 40 and 42) or the 7/8 tubes models 38 and 44 with four tuned circuits with an antenna isolating stage and a local/distance switch. In each case the output valve was the 171-A single ended audio.

The models 37 and 38 had the early version power supply, whilst the 40, 42 and 44 had the single unit power supply with an 'adjusting resistor' in series with the input to the transformer. The idea was, if the mains voltage rose above 110V, the resistor heated up and produced a voltage drop to correct the input voltage (AC mains in the US varied between 110 and 120 volts).

By way of interest, the model 41 was for 110V DC mains, and used series connected 112-As and push pull 171-As for greater power because of the reduced DC to the anodes (about 100 volts allowing for filtering). The model 43 used eight tubes with push-pull 112-As in conjunction with the dynamic speaker model F3 or F4.



# vintage radio



By Roger Johnson, VK5ZKP E-mail [vintage@radiomag.com](mailto:vintage@radiomag.com)

The model 45 was a successor to the model 40; the model 46 was a re-released version of the model 43, but with push-pull 171-As in the output, and a larger capacity power supply. The last of the line, the model 47, was the push-pull version of the model 44. Each of the last two used EM speakers instead of the magnetic free cone model E speakers.

## Servicing these receivers

As was mentioned before, the amplifying stages of all of these receivers are remarkably similar and use many of the same components. AK service literature was fairly primitive; if it didn't work, replace the entire sub assembly! If any one tuning gang was crook, or a coil primary went open circuit, one replaced the entire sub frame of all the tuning sections and coils! If any of the power supply voltages were out, you'd replace the entire power supply!

But, to get back to business, there are three main areas of concern. Firstly, in the RF end, there will be open circuit grid stoppers or open circuit coils, usually primaries. In the first instance, a replacement grid stopper soldered on the underside

of the little flat former so that the resistor is out of view will do the trick. As for open circuit primaries, carefully remove the open circuit winding, noting the direction and the terminations. Leave the old insulating goo in place, and re-wind with 15 turns of 0.25mm ECW.

Secondly will be open circuit audio transformers. These need to be replaced — if you can get them. The trouble with buying a cannibalised set for parts (what the Yanks call a 'junker') is you are buying a pig-in-a-poke and could be wasting your money. There are basically two choices: removing the core from the cans (by no means an easy task) and having it re-wound professionally, or, admitting defeat, leaving them in place, and soldering an anode load, coupling capacitor and grid leak across the defunct transformer windings. 100K, 10 nF and 0.5 meg respectively will work well enough.

Another solution is to remove the innards and replace the core with something similar salvaged from a working interstage transformer that will fit in the can. To replace the AK transformer with a substitute of any description significantly detracts from its appearance and character.

The smaller can contains a 'hedgehog' assembly — that is, the windings are overlaid on a cylindrical former, which is then filled with soft core steel wire about three times longer than the core solenoid. These wires are bent back over the solenoid, so that the entire winding in enclosed within its wire cage.

The third problem is for electric sets... viz, the power supply.

The power supply can really only be tested by ensuring that there are no shorts or leakages to earth, and then turning it on, and hoping for the best. Figure 3 shows the connections and the colours of the short wiring loom. (The mains switch is on the front panel, and the wiring to the switch and the box should be carefully checked beforehand, as well as any obvious shorts from the mains plug to the switch or the cabinet.)

Voltage Test Chart Atwater Kent A. C. Sets (Measurements made while set is in operation)		Model 36 Model 37 to Serial No. 1,265,000	Model 37, Serial No. 1,265,001 to 1,385,000	Model 37, Serial No. 1,385,001 and up	Model 38	Models 40, 42, 44 and 52
FIL. VOLTAGES (Use 0-5 A. C. meter)	TEST TERMINALS (Colors of cable leads)	APPROXIMATE VOLTAGE				
Detector	Red-white tr. to black-white tr.	2.3	2.2	2.3	2.3	2.35
R. F. & 1st A. F.	Red to black	1.4	1.45	1.3	1.3	1.45
Power (2nd A. F.)	Red-green tr. to black-green tr.	4.8	4.7	4.8	4.8	4.8
<b>PLATE VOLTAGES</b> (Use high resistance D. C. meter)						
Detector	Red-white tr. to yellow.	30	25	30	48	44
R. F.	Red to any R. F. tube "P" contact (thru eyelet).	135	165	170	180	160
1st A. F.	Red to black—red tr.	110	135	160	160	155
Power (2nd A. F.)	Red-green tr. to brown.	120	145	175	180	180
<b>BIAS VOLTAGES</b> (Use high resistance D. C. meter)						
On Power tube	F to G (socket 2A, thru eyelets).	25	30	45	45	45
On R. F. and 1st A. F. tubes	F to G (socket 1A, thru eyelets).	12	12	13	13	13



The voltages can be worked out from Figure 4. If the HT is okay, but other voltages are low or absent, chances are faulty voltage dropping resistors. These are located under the connecting panel of the power supply, and to access them, all of the nuts must be undone and the top panel (to which is connected the loom to the radio) is then lifted out of place. The glass resistors should then be be visible. If not, they are underneath the underpanel, which is accessed in a similar manner. In the likely event that they are open circuit, solder a 1 watt modern variety of the correct value in place, retaining the old glass ones for the sake of completeness.

If you have no HT at all you have a problem. This means an entire power supply re-build which is beyond the scope of this article.

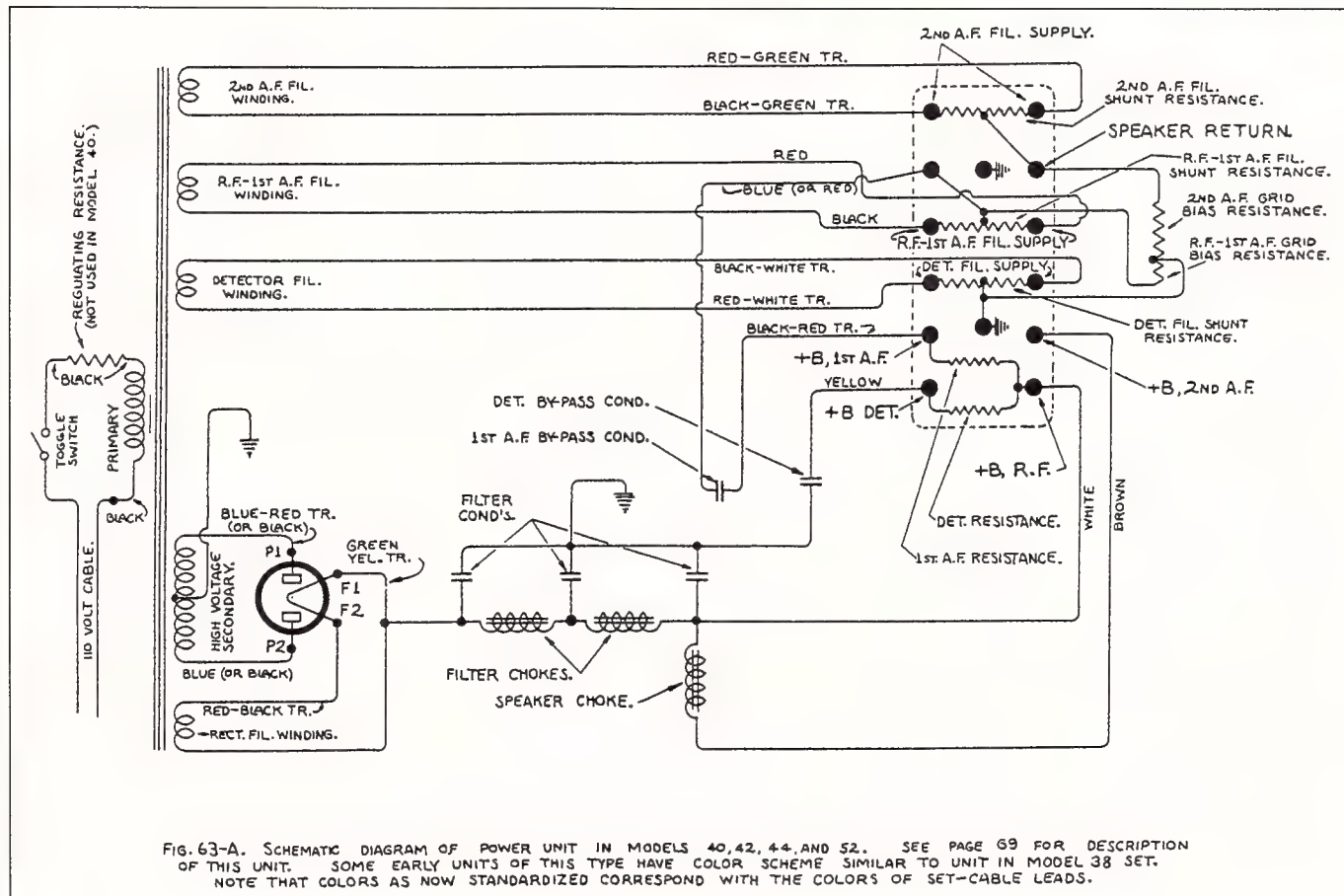
The one last component likely to be faulty is the grid leak, which is also a glass type. Its value is 2 meg ohms, and a replacement can be soldered under the chassis hidden from view. Retain the old one for the sake of completeness.

Once you have a working radio, the last thing to be done is an alignment. This is indeed possible and will certainly be necessary if any of the coils have been re-wound. The trick is to adjust each of the tuners relative to the one 'reference'. This will be the one with the double pulley and the dial knob. After ensuring that the grub screws are free, loosen them off and tune to the highest frequency on the band. Gently rock the first gang section whilst holding the remainder firmly in place by carefully but firmly holding the dial knob. Rock the first section for maximum output, and fasten the grub screw. This procedure is repeated for the third or detector tuner. In the event of a four-stage tuner, the process is repeated for that stage as well. The correct settings will be when the highest frequency station is loudest. The process can be quite tricky.

The AKs with a type E speaker really look the part and work rather well. Tuning is pretty sharp for solenoid coil TRFs, and the audio quality is more than passable. If you have one, good luck.



*Here's another Dayton shot. The Editor found lots of antique wireless stalls there with many interested customers.*





# MILITARY SOUNDS

By John Batty, VK4MBK  
E-mail [utes@radiomag.com](mailto:utes@radiomag.com)  
PO Box 703, Nanango, QLD 4615



Vintage radio enthusiasts may be interested in contacting a gent I ran into at our local markets recently. He's self-published a 22-chapter, A4-sized book called **The Best Years of Australian Radio**, covering Australian valve radios from the mid 1920s through to the 1950s, and imported sets of earlier years.

The book is 190+ pages, with 600 B&W photos and 150 illustrations. I had a look at one at the markets and it looks like a good reference book for vintage collectors. He had a beautiful example of an **Atwater-Kent** radio there too — that's what caught my eye. He's also in the process of writing a second book on the subject, and is on the look out for any information he can get hold of.

His name is Rod Smith, and his contact details, if you're interested in the book, are 14 Ryan Street, Loganlea 4131, or E-mail [rodsmith1@optusnet.com.au](mailto:rodsmith1@optusnet.com.au). You can phone him on (07) 3200 2329.

I was contacted recently by Peter Grimmond, an electronics engineer near Newcastle, NSW. The E-mail subject grabbed my attention immediately: **"Interesting US Military Sigs on 261.4MHz"**.

In his initial E-mail, Peter said "I have in my range of antennas a home-built four-element Yagi with a preamp for the 260MHz region facing NE. Now and then I listen to the Williamstown jets, and a few years ago heard a strange signal on one of their common approach freqs. It was an American voice on 261.400 in AM mode. I brushed it off as a bounce from Sydney somehow, with a base down there, as I am high up and have a clear shot to the South, or perhaps some ops out to sea, which I also have a reasonable shot at.

"The other day while doing some checks I just sat on 261.400MHz and did some work on the other side of the room. Again, to my surprise, an American voice (female) came on and did some readouts with a US male's voice. I checked to see if they were actually on FM, but it seemed clearer on AM, and spot on 261.400MHz. They have been on now and then, and were in fact active this morning (July 3) at 5.30am. This counts out any flying from nearby bases or reflections from commercial SYD-BNE flights, which often reflect signals off their wings, as the first flights don't leave until at least 6am.

"Do you have any info on this? It seems strange they are on AM, which tells me it *should* be aircraft, but at the same time it looks as though it is from a satellite. I have not as yet noted any real information passed during

The 30th of June (Canada Day) saw a very unusual HF pirate transmission; one I'd certainly never heard before anyway, and one I would have missed this time were it not for an E-mail heads-up from Simon Denneen. On 6955kHz USB I tuned in just in time to hear a gaggle of voices followed by a put-on robotic voice saying "Hello... hello... is this thing on? This is Fargo, broadcasting from the Yellow Submarine. I'm sitting here on **Mystery Science Radio**, sitting in for Cherokee Jack, who I last saw outside the submarine, trying to escape, wrestling with a shark... I know I don't have the best voice for radio, so I'm going to watch a short from **Mystery Science Theatre 3000** called 'Using Speech'".



There followed a half-hour or so of what were obviously clips from a TV show which was, in fact, instructing on how to use the voice to win friends and influence people, interspersed with comic comments, songs by a male choir-like group (including a rendition of "Blow the Man Down") and solos by "Digger Smokin'" such as "Greensleeves".

The signoff by Fargo included "Rest in Peace, **Mystery Science Theatre 3000**" and farewells to the **Mystery Science Theatre 3000** crew — a strange-sounding cast of characters.

**Mystery Science Theatre 3000** was a TV show which has apparently run for the last nine years or so on the Sci-Fi Channel in the USA.

It was the farcical, spoof story of a guy trapped in outer space with robot side-kicks, forced to sit in a movie theatre with his robot friends, watching the shocking old B- and C-grade science-fiction movies we all love to hate at 3am on night shifts and making fun of them.

The huge number of fans of the show, known as "MiSTies", hold conventions and know the punch-lines by heart. Apparently, the network

has recently pulled the plug on the show, and this was a tribute broadcast.

**Mystery Science Radio** has gone out in the past on 25,820kHz on USB and sometimes on NBFM. I am told if you don't have NBFM on the receiver you're using, a primitive form of "slope detection" will work; go to AM mode and tune either plus or minus 3kHz of the frequency of the NBFM broadcast you want to tune. Audio quality will suffer a little, but apparently it works.

E-mail inquiries following this broadcast revealed that it was actually made over the transmitter of "my favourite pirate", **KIPM**, and, in fact, a **KIPM** broadcast followed immediately **Mystery Science Radio** left the airwaves. Audio clips of both broadcasts are now on my website <http://www.caradoc.com> and follow the audio clip links. I'm very grateful for the heads-up to this "historic" broadcast, Simon!

Thanks to a heads-up from Roland Beaney in the UK, we have advance warning of **Radio Caroline** coming on shortwave from America. Courtesy of Al Weiner and his SW station WBCQ The Planet, **Radio Caroline** will soon be on air with 50kW of power on 17,495kHz and 7415kHz.

We expect nine hours of programs each week and will bring you dates and times as soon as they are known. The actual stated purpose of these broadcasts will be to create a larger audience for **Radio Caroline** webcasts in the USA and for their satellite broadcasts in Europe, but that doesn't mean that we here in Australasia can't enjoy them if propagation permits at the time of broadcasts.

Al Weiner worked on **Radio Caroline** for a spell and then created the offshore **Radio New York International; Radio Sarah** and is currently also involved in another ongoing offshore radio project. As soon as I receive notice of times/dates of transmissions, I'll let you know.





chats, but most QSOs are short by nature, and this is no exception."

I didn't have any information about the frequency, except that it wasn't in any of my satellite frequency lists.

261.4MHz is below the bandplan I had for the PacWest bird, whose first frequency by my list is 261.45MHz.

I asked Ian Julian if he knew anything about it, and lo and behold he'd heard the odd stray signals there too, and knew that it was the calibration frequency for PacWest, with discrete AWACS SatComm signals heard on it occasionally back in the '80s and '90s.

Simon Denneen had heard the occasional sigs on the frequency too.

Jem Cullen found a frequency list which allotted 261.4MHz to NORAD, which is quite feasible because NORAD traffic has been heard here in Nanango on 261.8MHz, TOP ROCC (NORAD Alaska) and MOUNTAIN TOP (Cheyenne Mountain, Colorado) doing radio checks. I had a listen for a day or two and caught some very weak, unreadable, sporadic traffic which I couldn't resolve.

On the strength of all this, Peter, an electronics engineer, whipped up a dedicated 5-element Yagi antenna and a tuned 15dB GaAsFET low noise amplifier, fed into a drop pad (5dB) and then into another 15dB wide band generic MMIC amp for the run down to the rig. All of this fire power was aimed directly at PacWest Bravo, so Peter sat back to wait.

He didn't have to wait long. Almost immediately he heard "Test secondary on HF" in an American male voice. Then data.

Peter reports: "A day or so later the frequency was active again with "1, 2, 3, 4, 5 test test" several times over. This was at 9.05am EST. It was actually clear.

"Last night as I switched off the PC from E-mailing you, I received some comms with talk of distances (10 miles) and some other aircraft/airborne talk. The signal was okay, around two to three 'bars', but muffled.

"At 4.45pm "power levels need to be checked", then at 5.06pm "As soon as you can find a..."

"Is anyone else hearing anything on this frequency?"

### Look out below...

Ben Cox from Taree writes "I have been an R&C reader for a little over two years now, with a strong interest in scanning and SWL.

This morning (July 16), I was monitoring the Air Force on 8974kHz USB and heard a very interesting conversation. Qantas 3 was icw with AFSyd requesting a phone patch to Qantas control. Q3 was directed to change to 9007kHz.

"1107 EST 9007 kHz USB (Qantas control icw Qantas 3): A member of the general public reported seeing a large rectangular object falling from a plane somewhere south of Hunters Hill (I don't know where that is). They could not identify the aircraft, but ATC narrowed it down to your aircraft or an AIR NZ aircraft.

"Q control stood by while Q3 checked and reported back Ops normal. Q3 requested that engineering in Honolulu be informed so they could check the aircraft on arrival. Then the patch terminated.

"It was a stroke of luck that I heard this as I was flipping between Brisbane centre and AF Syd just before this came over."

### This month's logs

#### 2207kHz:

**1240z** ZLM: Taupo Maritime with New Zealand wx. (SD)

#### 2524kHz:

**1002z** COASTAL PATROL YAMBA: broadcasting station hours of operation. (SD)

**1050z** VMR201: Royal Volunteer Coastal Patrol Eden broadcasting station hours of operation. (SD)

**1124z** VKN224 (?): with station close broadcast. (SD)

#### 2676kHz:

**0552z** VMR220: Royal Volunteer Coastal Patrol Newcastle with wx sked and acknowledgment from GOSFORD and LAKE MACQUARIE. (SD)

#### 5130kHz:

**0036z** VME316: NSW Dept. Education, Dubbo with YL complimenting student on work. (SD)

#### 6912kHz AM:

**1445z** Unid: NATO phonetic alphabet station (E10) with call-up SYN2 (AN)

**1556z** Unid: NATO phonetic alphabet station (E10) with call-up SYN2 (AN)

#### 7330kHz:

**2318z** VL2SES: NSW State Emergency Services with GUYRA conducting net check with LORD HOWE and MOREE 73. (SD)

#### 7357kHz:

**0024z** VLN: School of Distance Education Cairns with YL conducting writing lesson. (SD)

#### 7365kHz:

**0026z** Unid: with "62" icw PORT AUGUSTA after SelCall. (SD)

#### 7885kHz:

**0031z** VLR: Longreach School of the Air with YL conducting spelling lesson. (SD)

#### 8011kHz:

**0033z** VJQ727: Capricornian School of Distance Education with OM commencing lesson with roll call. (SD)

#### 8035kHz:

**0035z** VHA: Alice Springs School of the

Air with YL commencing lesson with roll call. (SD)

#### 8974kHz:

**0550z** ARMY HIGH RANGE clg AIR FORCE TOWNSVILLE with request for p/p and advised to QSY 8992kHz. (SD)

#### 8992kHz:

**0552z** AIR FORCE TOWNSVILLE clg ARMY HIGH RANGE with radio check prior to p/p. (SD)

#### 9300kHz:

**2317z** VL2SES: NSW State Emergency Services with GUYRA clg LORD HOWE for daily net check. (SD)

#### 11,175kHz

ANVIL 03 in phone patch with MIDWAY OPS 0650z via ANDERSEN 11,175kHz ETA MIDWAY 1127z, 7 crew members, remain overnight, depart tomorrow. [ANVIL is a USAF E-3B 963ACS/964ACS/965ACS/966ACS/552ACW Tinker AFB] (JB)

#### 13,206kHz:

**0202z** MRX clg AIR FORCE DARWIN for radio check. (SD)

#### 13,533kHz AM:

**0530z** Unid: NATO phonetic alphabet station (E10) with call-up EZI, passing 43 group message. (AN)

#### 18,864kHz:

**0027z** Unid: Cherry Ripe (E4) numbers station in progress. (AN)

#### 21,866kHz:

**0027z** Unid: Cherry Ripe (E4) numbers station in progress. (AN)

#### 21,985kHz:

**0614z** AUSSIE 098, revised time for next position. (WA4)

**0619z** AUSSIE 098, requesting course deviation up to 30 miles left of course due to WX. (WA4)

**0622z** AUSSIE 098, cleared to deviate up to 30 miles left of track. (WA4)

**0635z** AUSSIE 098, ATC requesting altitude, 098 is at 1200 feet. (WA4)

**0646z** AUSSIE 098, arrival report, on the ground at Majuro. (WA4). [Now there's a beautiful spot to visit; an elliptically-shaped reef 25 miles (40 km) long, comprising 64 tiny islets with a total land area of 10 square km. Majuro is the capital of the Marshall Islands.] (JB).

#### 31,100kHz:

**2308z** Aust Army DDPAC Net, Townshend Island SWBTA, QLD with "TOWNSHEND ISLAND acknowledged out... This person requires evacuation to CAMP GROWL for a CT scan and/or other... over... GOLF ZERO CHARLIE, say again... GOLF ZERO, I say again, line five ambulatory, line nine Townshend Island... this member requires evacuation to CAMP GROWL for CT scan and further monitoring over... This is GOLF ZERO CHARLIE, say line three... over... GOLF ZERO, I say again line three priority over... GOLF ZERO priority one CASEVAC...

...More on Page 76



## Frequency guide

Compiled by Chris Edmondson

### This month: Useful world frequencies

**T**his listing of frequency allocations from around the world includes some pretty conventional services, such as the international 27MHz and VHF marine allocations, but also includes some of the really bizarre and whacky things like remote keys, traffic lights and the like. If you've ever wondered what that weird signal you're hearing really is, the answer might be here...

Before getting stuck into the frequency list this month, we've found an amazing listing of all sorts of weird and covert channels at <http://www.panix.com/clay/scanning/frequencies/bugs.shtml>. Check it out!

#### "Handphones" and communicators

##### Australian handphone stations:

27.230, 27.240, 27.250, 27.260, 27.270, 27.280, 27.550, 27.560, 27.580 (bush fire fighting only), 27.590, 27.620, 27.660, 27.760

##### Philippines short-range radio service (SRRS). 2.5 watt simplex, hand-held only operations:

325.000, 325.0125, 325.025, 325.0375, 325.050, 325.0625, 325.075, 325.0875, 325.100, 325.1125, 325.125, 325.1375, 325.150, 325.1625, 325.175, 325.1875, 325.200, 325.2125, 325.225, 325.2375, 325.250, 325.2625, 325.275, 325.2875, 325.300, 325.3125, 325.325, 325.3375, 325.350, 325.3625, 325.375, 325.3875, 325.400, 325.4125, 325.425, 325.4375, 325.450, 325.4625, 325.475, 325.4875

##### French short-range business radio (SRBR):

446.950, 446.975, 446.9875

##### Australian radio-linked microphones:

36.700, 37.100, 37.600, 39.100, 40.680, 202.100, 202.200, 202.400, 202.500, 202.600, 202.900, 203.300, 203.400, 203.700, 203.800, 902.750, 904.000, 905.000, 908.250, 908.500, 909.000, 909.750, 910.750, 911.000, 912.750, 914.000, 914.250, 914.750, 915.750, 916.750, 917.250, 918.500, 919.000, 921.000, 921.500, 921.750, 925.000, 926.000, 927.250

##### Australian headset communicator channels:

55.020, 55.035, 55.050, 55.065, 55.080, 55.095

#### Cordless telephones

It's not legal to listen to any traffic carried via the PSTN (public switched telephone network) in Australia so, for that reason, we are not presenting Australian cordless phone information in this guide. However, many VHF enthusiasts legally use overseas cordless telephone channels as good indicators of propagation to distant lands, so here is a selection of overseas services.

##### USA cordless telephones

###### Base unit transmit frequencies:

43.720, 46.610, 46.630, 46.670, 46.710, 46.730, 46.770, 46.830, 46.870, 46.930, 46.970

###### Handset transmit frequencies:

49.670, 49.770, 49.830, 49.845, 49.860, 49.875, 49.890, 49.930, 49.970, 49.990

##### NZ cordless telephones

###### Base unit transmit frequencies:

30.325, 30.350, 30.375, 30.400, 30.425, 30.450, 30.475, 30.500, 30.525, 30.550, 30.575, 30.600, 30.625, 30.650, 30.675, 30.700, 30.725, 30.750, 30.775, 34.250, 34.275, 34.300, 34.325, 34.350, 34.375, 34.400, 34.425, 34.450, 34.475

###### Handset transmit frequencies:

40.025, 40.050, 40.075, 40.100, 40.125, 40.150, 40.175, 40.200, 40.225, 40.250, 40.275, 40.300, 40.325, 40.350, 40.375, 40.400, 40.425, 40.450, 40.475

#### Miscellaneous services

Australian "Demonstration frequency": 41.750

Differential Global Positioning Satellite (DGPS) Systems: 152.375, 152.475, 173.450 and 173.575

EPIRBs: 121.500, 169.3875, 242.800 and 243.000

European ISM devices: 433.050

European radio-activated key entry systems: 433.920



**Australian Exterior Paging, Weather Information:** 148.0875

**Australian Interior Paging:** 26.978, 27.212, 27.640, 27.670, 40.680, 40.750, 148.3375, 149.1875, 153.800, 450.325 and 450.375

**Australian Lo-Jack Vehicle Tracking Equipment:** 173.075

**Australian Micro-Tel Telemetry Transceivers Simplex:** 458.525, 458.550, 458.575, 458.600 and 458.625

**Australian model control, aircraft and watercraft:** 36.000

**Australian model control, aircraft, landcraft and watercraft:** 29.720

**Australian portable traffic lights:** 151.400

**Australian Scientific Stations:** 72.225, 74.425, 157.625, 162.225, 411.500, 493.500, 498.700, 830.1875 and 875.1875

**American Multi-Use Radio Service (MURS):** 151.820, 151.880, 151.940, 154.570 and 154.600

**American GMRS:** 151.625, 154.570, 154.600, 462.575, 462.625, 462.675, 464.500, 464.550, 467.850, 467.875, 467.900 and 467.925

**American 'Itinerant' Business Band:** 169.445, 169.505, 170.245, 170.305, 171.045, 171.105, 171.845 and 171.905

**American 'Itinerant' Business Band hand-helds:** 151.625

**US Coast Guard Air Search frequencies:**

Primary: 123.100 and 381.800

Secondary: 122.900 and 282.800

**UK PMR446 Hand Portable Mobile Radio Service.** (See <http://www.tomgrady.dircon.co.uk/pmr446.htm> for details.): 446.00625, 446.01875, 446.03125, 446.04375, 446.05625, 446.06875, 446.08125 and 446.09375

**UK Short Range Business Radio (SRBR):** 461.2625, 461.300, 461.475 and 461.4875

**Baby monitor channels:** 49.830, 49.845, 49.860, 49.875 and 49.890

**American Low-power hand-held transceivers:** 49.670, 49.770, 49.830, 49.845, 49.860, 49.875, 49.890, 49.930, 49.970 and 49.990

**VKS-737 Australian National 4WD Radio Network Inc** 3.995, 5.455, 8.022, 11.612 and 14.977

**Waverider Buoys:** 27.565

**American 'V-Link' system, 0.2mW:** 903.4875, 904.000, 904.500, 905.1375, 905.6625, 906.3375, 907.000, 907.6625, 908.500, 909.3375, 910.2375, 910.9125, 912.000, 913.3375, 914.0875, 915.000, 915.8625 and 916.875

**American Family Radio Service:** 462.000, 462.5625, 462.5875, 462.6125, 462.6375, 462.6625, 462.6875, 462.7125, 467.5625, 467.5875, 467.6125, 467.6375, 467.6625, 467.6875 and 467.7125

**American General Mobile Radio Service:** Base transmit 462.550, 462.575, 462.600, 462.625, 462.650, 462.675, 462.700 and 462.725. Mobile transmit 467.550, 467.575, 467.600, 467.625, 467.650, 467.675, 467.700 and 467.725. Simplex 462.5625, 462.5875, 462.6125, 462.6375, 462.6625, 462.6875 and 462.7125

**American Wireless Microphone allocations:**

169.445, 169.505, 170.245, 170.305, 171.045, 171.105, 171.845, 171.905, 947.250, 947.750, 948.250, 948.500, 948.750, 949.000, 949.250, 949.750, 950.000, 950.250, 950.750, 951.250, 951.500 and 951.750

**Australian short-term rental frequencies:**

415.450, 415.475, 415.500, 415.525, 415.550, 471.475, 471.625, 471.900, 471.975, 494.050, 494.175

## Marine services

The following listings are international allocations for the marine service:

### Ship transmit:

Port operations, shore to ship and ship to shore (duplex):

156.975, 157.000 and 156.100

Seaphone:

157.150, 157.200, 157.250, 157.300, 157.350 and 157.400

Talk-through repeaters:

157.025, 157.050, 157.075, 157.100, 157.125

General-purpose channels:

156.025, 156.050, 156.075, 156.125, 156.150, 156.175, 156.200, 156.225, 156.250, 156.275, 156.325, 156.350, 156.900, 156.925, 156.950, 157.175, 157.225, 157.275, 157.325, 157.375 and 157.425

### Shore transmit:

Port operations, shore to ship and ship to shore (duplex):

161.575, 161.600 and 160.700

Seaphone:

161.750, 161.800, 161.850, 161.900, 161.950 and 162.000

Talk-through repeaters:

161.625, 161.650, 161.675, 161.700 and 161.725

General-purpose channels:

160.625, 160.650, 160.675, 160.725, 160.750, 160.775, 160.800, 160.825, 160.850, 160.875, 160.925, 160.950, 161.500, 161.525, 161.550 and 162.025

### Simplex:

Distress and safety:

156.375

Port operations, intership:

156.300, 156.400

Port operations, shore to ship and ship to shore:

156.425, 156.450, 156.500, 156.550, 156.600, 156.650 and 156.700

Professional fishing channels:

156.625 and 156.575

General channels, all simplex: 156.675, 156.475, 156.525, 156.725, 156.875 and 157.375

Calling channel, distress and safety: 156.800

Inshore boating service:

27.680, 27.720, 27.820, 27.860, 27.880, 27.900, 27.910, 27.940, 27.960 and 27.980

International marine distress:

2.182

International search and rescue:

3.023 and 5.680

Maritime onboard communications

457.525, 457.550, 457.575, 459.075, 467.525, 467.550, 467.575 and 470.375



# THE TX DX REPORT



Welcome all to the *TX DX Report* for September. Things have still not settled down as yet here at my QTH but as they say "it's getting better". (For the newcomers, Tex was most apologetic last month at the shortness of his report following a family bereavement. Ed.)

Things have been rather quite the last month or so with shocking propagation on most bands except for 20m, which from time to time has some interesting DX. Last month saw the IARU Contest with some interesting stations appearing on the bands — such as 9AØHQ, ER7HQ, FK8GM, HSØAC, LOØD and many more.

This contest took place on July 14 and 15. The contest rules are on the Web site: <http://www.arrrl.org/contests/announcements/rules-iaru.html>

In another interesting bit of trivia, the 425 DXN people recently conducted a survey amongst its readers on the most popular DX logging program, and received 2506 valid votes from all over the world.

Here are there results for the top 10:

- 1 DX4WIN
- 2 LOGGERS
- 3 CT
- 4 DXBASE
- 5 WRITELOG
- 6 AALOG
- 7 EQF
- 8 TRLOG
- 9 LOGIC
- 10 SUPER DUPER

Also another bit of interesting reference material is a book published by Rod Dinkins, AC6V, called *The Amateur Radio DX Reference Guide*. It makes for very interesting reading and is an immense help to DXers, both new and old to the hobby. The book was a year in the writing, and features the DXing advice of several noted DXers and technical gurus. This is not a brag book on his personal DX exploits, but tried and true practical DX advice from those who have been there, done that, and worked them all. Enquires to: Rod Dinkins, AC6V 4982 Marin Drive, Oceanside, CA 92056-4973 USA

## DX News Africa/Atlantic Ocean/Indian Ocean notes

### 7Q Malawi

Five Japanese operators have activated from Malawi since June 6. Especially look out for 7Q7YL who will be staying there for two years. QSL via JG6BKB.

### TY Benin

Flo, F5CWU reports that the operation from Benin is now on schedule to take place this month from August 11-29.

### FR/T Tromelin

Gil, F5NOD reports that another batch of 1500 FR/F6KDF/T cards were mailed on June 14. All of the direct requests received before April have now been processed. So you should have received your card by now. (I know, I have!)

### 9QØAR Democratic Republic of Congo

TU5NC/5NØYL, F6BLQ/5NØT and others activated this club station July 13-15 during the HF World IARU Contest. QSL via F2YT.

### C5 The Gambia

Peter Fox, G2YT was active on 40 to 10m (SSB only) as C56YT from here between July 28 and August 9. Peter came up on the ANZA Net and some of the VKs and ZLs were able to work him for a new one. QSL goes to Dave, VK4AO.

### T5 Somalia / 3XY Guinea

The DXCC Desk has announced approval for credit for the T5AR operation from Somalia and the 3XY1BO, 3XY7A, 3XYØ3A operations from Guinea.

## Asia and Pacific

### JD1 Okino-Torishima IOTA

IOTA enthusiasts please note that recent contacts with JQ1SYQ/JD1 will not be acceptable for IOTA credit AS-052. This number has been deleted from the IOTA list because Okino-Torishima has been found not to comply with the IOTA qualification criteria. As there is no active resident amateur, existing contacts will count until Feb 1, 2005, but no new operations can be accepted after 1 Feb, 2001.

### Ducie Island

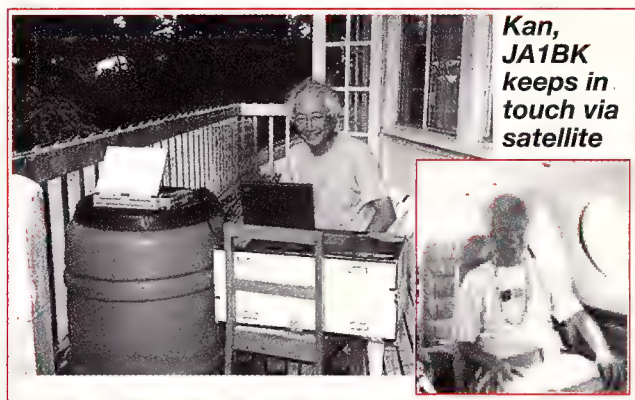
Kan Mitzoguchi, JA1BK/VP6BK has announced that the Pitcairn Amateur Radio Association is organising a DXpedition to Ducie Island (OC-182). See <http://www.iiijnet.or.jp/JA1BK/index2.html>

Kan seems to have had a hand in a lot of DXpedition events over the years, and his web site just about covers the lot. It's well worth a look, and loads quickly.

Ducie operations, meanwhile, are expected to start at 0000 UTC on about November 16 and there will be three stations operating 24 hours a day.

The team will include Tom Christian, VP6TC, VP6DB, JA1BK/VP6BK, JA1SLS/VP6BB, JF1IST and three others. QSL will be via VE3HO.

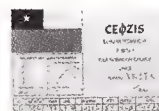
This may also end up being a new DXCC country. The PIARA has applied for membership into the IARU.



Kan, JA1BK keeps in touch via satellite







## Calling frequencies

In this month's issue we present a list of accepted calling frequencies from 160 to 10M. This gives DXers an opportunity to listen to the "gentleman's agreement frequencies" where you can possibly pick up that needed country. Here is the list:

### 160 METRES

- 1.810 QRP calling frequency
- 1828.5 DXpeditions. CW ops are frequently here
- 1.830-1.840 CW, RTTY and other narrowband modes; intercontinental QSOs only
- 1.840-1.850 CW, SSB, SSTV and other wideband modes; intercontinental QSOs only

### 80/75 METRES

- 3.500-3.510 CW DX Window
- 3.505 DXpeditions (CW) are frequently here
- 3.560 QRP Calling frequency
- 3.590 RTTY DX
- 3.710 QRP Novice/Tech CW Calling Freq (not VK)
- 3.790-3.800 SSB DX Window
- 3.799 DXpeditions (SSB) are frequently here
- 3.885 AM Calling Frequency (not in VK)
- 3.985 QRP SSB Calling Frequency (not in VK)

### 40 METRES

- 7.000-7.010 CW DX Window
- 7.005 DXpeditions (CW) are frequently here
- 7.040 RTTY DX
- 7.050 XTAL-controlled Rigs
- 7.065 DXpedition (SSB). USA split to 7.150 and up
- 7.110 QRP Novice/Tech CW Calling Frequency
- 7.171 SSTV
- 7.285 QRP Calling frequency
- 7.290 AM Calling frequency

### 30 METRES

- 10.106 QRP (CW) Calling frequency
- 10.110 DXpeditions (CW) are frequently here

### 20 METRES

- 14.025 DXpedition (CW) Freq; usually split
- 14.060 QRP Calling frequency
- 14.080 DXpedition RTTY Freq
- 14.100 NCDXF Beacons
- 14.195 Rare DX & DXpeditions frequently operate SSB here; generally listening up-split
- 14.230 SSTV
- 14.285 QRP Calling frequency
- 14.286 AM Calling Frequency
- 14.336 County Hunters when open; mobiles

### 17 METRES

- 18.075 DXpeditions (CW) frequent here; usually split
- 18.110 NCDXF Beacons
- 18.145 DXpeditions (SSB) frequent here; usually split

### 15 METRES

- 21.025 Rare DX & DXpeditions frequently operate CW here; generally listening up-split
- 21.060 QRP CW calling frequency
- 21.080 RTTY DXpeditions are frequently here
- 21.150 NCDXF/IARU beacons
- 21.295 Rare DX & DXpeditions frequently operate SSB here; generally listening up-split
- 21.340 SSTV
- 21.385 QRP SSB calling frequency

### 12 METRES

- 24.895 Rare DX & DXpeditions frequently operate CW here; generally listening up-split
- 24.930 NCDXF Beacons
- 24.945 Rare DX & DXpeditions frequently operate SSB here; generally listening up-split

### 10 METRES

- 28.025 CW Rare DX & DXpeditions frequently operate here; split
- 28.060 QRP CW Calling frequency
- 28.07015 PSK-31 (offset -115 for USB)
- 28.080 RTTY Rare DX & DXpeditions frequently operate here; split
- 28.1010 10/10 International CW calling frequency
- 28.120-28.300 Beacons
- 28.12015 PSK-31 (offset -115 for USB)
- 28.200 NCDXF/IARU beacons
- 28.380 10/10 International SSB calling frequency
- 28.385 QRP SSB calling frequency
- 28.400 10/10 International SSB calling frequency
- 28.425 10/10 International SSB calling frequency
- 28.495 SSB Rare DX & DXpeditions frequently operate here; split
- 28.600 Old general calling frequency; still used by many old timers
- 28.675-28.685 SSTV operating frequency - IARU Region 1
- 28.680 SSTV operations USA/Canada
- 28.825 10-10 Backscatter Net - Paper Chasers Net
- 28.885 6M DX liaison frequency; listen here for six metre DX opening announcements and discussions
- 28.945 FAX operating frequency
- 29.000-29.200 AM operations
- 29.300-29.510 satellite downlinks
- 29.520-29.580 FM repeater inputs
- 29.600 FM simplex; calling frequency
- 29.620-29.680 FM repeater outputs

We hope you can all make use of this table and use it to reduce interference to the some of the good DX that's on around these frequencies.





# THE TX DX REPORT



## Seonet Contest 2001

This took place between 12 UTC on August 18 and 19, and incorporated CW, SSB and digital modes. Full rules are available from Ray Gerard, HSØ/G3NOM, PO Box 1300, Bangkok, 10112, Thailand. E-mail: g3nom@rast.or.th

## S21 Bangladesh

John, KX7YT, operated as S21YV from Dhaka, between July 15 and August 5. He was on 15 and 20m around 14-18 UTC daily. If you were lucky enough, you can QSL via home call.

## ZK1 North Cook

An operation from Manihiki (OC-014) is confirmed to take place between October 18 and November 1. The operators will be Ralph VE7XF/ZK1AKX, John AA7PM/ZK1APM, Bob W7TSQ/ZK1ASQ, Roger W7VV/ZK1VVV, Victor ZK1CG and Tuatai ZK1MA/ZK1CY. They are going to participate in the CQ WW SSB DX Contest as ZK1CG.

## A5 Bhutan

Tony, IK7WUL will be active (on all bands mostly SSB) as A52UL from the AA51AA club station on August 15-28. QSL via I7JFQ.

## KH4 Midway

Ted Brattstrom, NH6YK, is planning to operate again as NH4/NH6YK from Midway Island (OC-030) this month. He will be active only on HF and 6m SSB only. QSL home call.

## C21 Nauru

Gwen, VK3DYL, apologises for the unavoidable delay in answering direct cards. Since stamps from C21 are greatly sought-after by philatelists, Peter C21TA intends posting the cards from Nauru on his next trip.

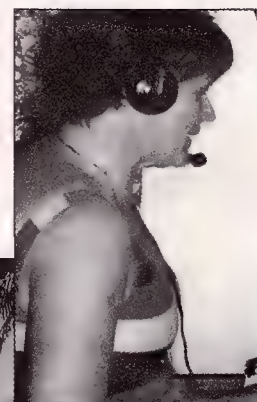
## BQ9P Pratas

Steve, KU9C, reports he received the cards for BQ9P in the middle of July. He began to process the cards immediately, but as he had some 6500 envelopes to fill, he was not able to get all of the cards out before mid-August, so be patient!

## HI9 Dominican Republic

Babs reports that all of the direct cards for HI9/DJ7ZG and HI9/DL7AFS have been sent out. The QSLs for their April/May activity from ZB2 and EA9 are being printed. Logs are available at <http://www.qsl.net/dl7afs>

Pictures below, clockwise from right, are map showing station location; Babs, DL7AFS at the mic; the couple's QSL card; Babs and Lot, DJ7ZG hard at work on the island; Lot on a recent VK visit.

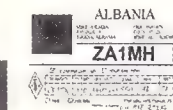
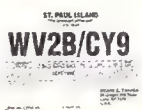
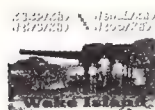


## QSLs for 9M8HIM, V8IAN, 3D2AA, 3D2CC.

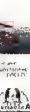
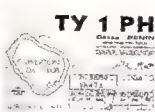
Russ, VE6VK, reports that he is receiving many cards with neither envelopes nor postage for return mail. As explained earlier this year, Russ does NOT use the

bureau for these DX stations, so if you want your cards, please do not forget to include one green stamp or one IRC when sending your request.

Russ A Wilson, 1235 Richland Road, Calgary, AB T2E 5M5, Canada







## South America - Caribbean

### HK Colombia

A special call 5K3CA hit the air on 80-10m all modes from Colombia on July 11. It remained on air until the end of August to celebrate the "Copa America" football (soccer) tournament.

QSL via HK3DDD either direct or through the Bureau.

### TG Guatemala

A Spanish team incorporating EA1QF, EA3CUU, EA4BT, EA4KA, EA7AAW, EA7JB, EB1ADG and EB4EE will be installing a digital radio emergency network in Guatemala. The system is similar to those installed in past years in El Salvador and Honduras.

The team will be there September 17-26, and will activate on 160-6m SSB, CW and RTTY with a special emphasis on CW and the WARC bands. The call sign will probably be TGØR, with QSLing via EA4URE.

### HK3 Malpelo

Carl, N4AA, says that QSL cards for HK3JJH/HKØ are being processed with batches of cards going out every day. So VKs and ZLs should get their cards very soon for this much-needed DX identity.

### CP Bolivia

Steve, G4ASL, is active from Cochabamba, Bolivia as CP5/G4ASL until October.

He operates on 80-10m mostly RTTY, PSK31, and CW with some SSTV. QSL to G4ASL via RSGB Bureau.

### J3 & J8 Grenada and St Vincent

Look for the Low Land DXpedition Team members PAØZH, PA3EWP, PA5ET and PA7FM for their operations from Bequia St Vincent (NA-025) on August 16-27.

They were previously on the islands of Carriacou Grenada (NA-147) from August 2-15.

Call signs are J3PA and J8PA to be used on 160m and during contests, while they will be signing J3/home calls and

J8/homecall on other bands and outside contests. The web page is <http://qsl.net/i1dxt>

QSL for the contacts via Rob Snieder, PA5ET, Van Leeuwenstraat 137, 2273 VS Voorburg, Netherlands.

## Europe

### A5B Cyprus

Look for 5B/IZ8CCW and 5B/IT9SSI to operate on 10, 15, 20 and 40m SSB and CW from Cyprus (AS-004) on 23-30 August.

They will try to be active from AS-120 as well. QSL via IZ8CCW.

### QSLs to UK9AA and UKØA

Karl, K4YT/DL4YT, is still receiving cards for UK9AA and UKØA, but he has not been the mail drop for Fedor since he left Germany in January 1998.

Please note that cards should be sent direct to Fedor Petrov, Box 58, Tashkent, 700000 Uzbekistan.

(Mind you, I received about three cards from Fedor via the VK1 Bureau — was this a lucky stroke?)

### GM Hoy High Lighthouse

The Orkney Amateur Radio Club will be active as GB5RO from Hoy High Lighthouse on the island of Graemsay (EU-009) during the International Lighthouse Weekend 18-19 August.

### 3A Monaco

Look for Gerry, 3A/IZ1DSH to be active on 40, 20, 15 and 10m on SSB during August. QSL via home call either direct or the bureau.

### SV9 Crete

SV9/WB2GAI was on the Island (EU-015) until August 12. If you caught him, QSL via home call.

### GM Shetland Islands

John, W5ZE, was active as MM/W5ZE/p from (EU-012) between 15-19 August. John and Pete MM5PSL operated from a lighthouse on 18-19 August as well.

### OY & TF Faroe and Iceland

Maurice, ON4BAM, activated OY/ON4BAM from the Faroe Islands (EU-018) on August 6-8.

He will then operate as TFx/ON4BAM from various call areas of Iceland (EU-021) until about 23 August.

He may also operate a few Lighthouses. QSL via home call ON4BAM.

## North America

### VE Zone 2 Canada

Sylvie VE2SYK, Yves VE2YVT, Tyon VE2YAT, Jean-Yves VE2PS have operated 10, 15, 20, 40, 80m CW and SSB as VE2A from CQ Zone 2.

Hope you all contacted this very hard to get Zone for your WAZ Award!

On the same Zone 2 if you missed out, Fred VO2/K2FRD reports that he is experiencing propagation problems on 10 and 12m and broadcast QRM over almost all of 40m, so he has had to discard much of his schedule as shown on his website.

He states the best time/freq to contact him is starting at about 22-23 UTC on 17m and eventually 15, 17 and 20m.

### FP Miquelon

Pete NN9K, Peg KB9LIE and Paul K9OT, activated on SSB 80-10m as FP/Home calls from Miquelon (NA-032) from 26 July until 1 August. They also participated in the IOTA Contest as FP/K9WM.

After the contest they will concentrate on the WARC Bands and PSK31. QSL via Home Calls. QSL for FP/K9WM is NN9K.

Well, that's it for another month. Hopefully the propagation will get better as the winter months draws to an end. And check out the Gabo Island report elsewhere in this issue. A good one!

Thanks to the various DX bulletins, such as ARRL DX News, 425DX News, OPDX etc and also the various amateurs who I keep in contact for all the "good oil".

May the DX be with you!  
73 from Tex, VK1TX.

R





# Club Pictorial

## PROJECT NIGHT - Gold Coast Amateur Radio Society Inc.

**D**oes your radio or electronics club have a project day or some other similar hands-on activity for members? If you do, then great stuff! These hands-on activity sessions are a great way to breathe a bit of life into your club and create some activity and interest for existing and new members.

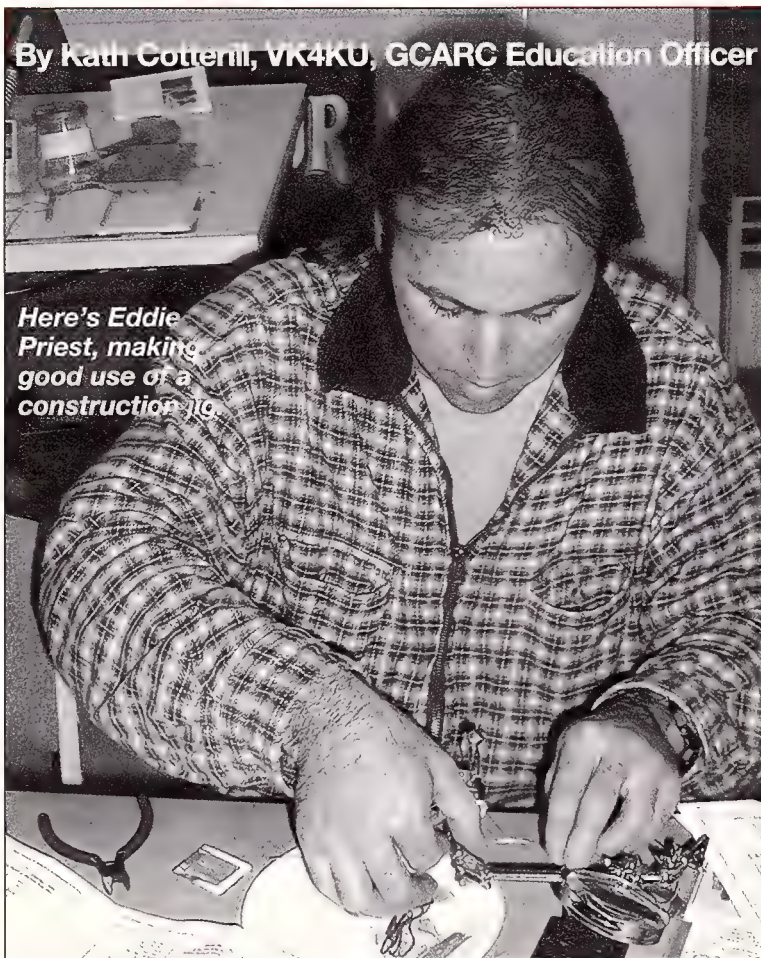
If your club is involved in any sort of theory teaching program, then an activity session is a great way to introduce your students to the practical side of the hobby.

Many clubs do build major projects as a team effort. Whole radio stations have been built up this way. These longer term projects usually require the support of members with significant skills and the enthusiasm to participate and work as a collective.

Radio and electronics clubs often provide (and frequently design) their

By Kath Cotterill, VK4KU, GCARC Education Officer

Here's Eddie Priest, making good use of a construction jig.



own complete kits of projects, which they supply to their members and other clubs for a fee. This is usually done at cost.

Often these projects are purchased and built by the individual on their own without club involvement.

*(If your club does have a project that it provides to others, then why not write to us at Radiomag and tell us all about it? Ed.)*

The Gold Coast Amateur Society is very much involved in education in amateur radio. There are currently 16 students enrolled and nearing the end of the 2001 AOCF course. By the time you read this, they will have sat or be very close to sitting their exams.

At GCARSI we realise that the primary requirement for most students is to get through those exams. However for those that are interested the 'theory instruction' does not help much with practical skills.

In fact, practical skills — even operating skills — are not part of the Amateur Radio exam. Even the Morse Exam is not a test of actual operational 'on-air' skill.

To that end GCARSI offers the students 'on air' experience with the club radio station and also 'simple' practical instruction.

These photos are of a recent project night. We like to pick easy projects that don't cost much money and can be completed in one sitting.

The last project night was the Dick Smith Electronics' FM transmitter reviewed in last month's *Radiomag*.

There was a great attendance on the night and all but a couple who had to leave early completed and tested the project successfully. A lot of fun mixed in with a bit of learning was had by all.

73 de Kath, VK4KU.

Share your Club news! Write to [editor@radiomag.com](mailto:editor@radiomag.com)

## HAM EXAM CRAM!

The **Gold Coast Amateur Radio Society**, in association with the **Radio and Electronics School**, is offering a three-day **FASTRACK** course for the Novice Radio Amateur Theory Exam. The course will be held at the club rooms at 85 Harper Street, Nerang over three days on three consecutive Sundays. The course will be **intense exam preparation** for the Novice Amateur Theory & Regulations exams. On completion of the cram course you will have the option to sit the examination at the club rooms.

The course will be conducted by experienced tutors. The program will be informal, free-flowing and flexible to student needs, but the focus will be intensive exam preparation. This is an opportunity for you to **FASTRACK** your way to an amateur radio licence.

This course is a unique opportunity. Don't miss out — register today! The club will provide a lunch and light refreshments through out the day.

Your tutors will be:

Ron Bertrand, VK2DQ; Jim Scholz, VK4YHN; Roy (VK4LPV) & Kath (VK4KU) Cotterill.

**WHEN:** 16, 23, 30 September 2001 from 10am to 4pm

**WHERE:** 85 Harper Street, Nerang

**COST:** \$15 per session (total \$45)

**INQUIRES & REGISTRATION:** (07) 5539 3530

Places are limited and are expected to fill quickly, so please do not delay your registration.



AOCPS students - from front left: Eddie Priest, Craig Hill, Keith Ralph, VK4VQ (instructor), Mark Hill, James Duffin and Keith Adams

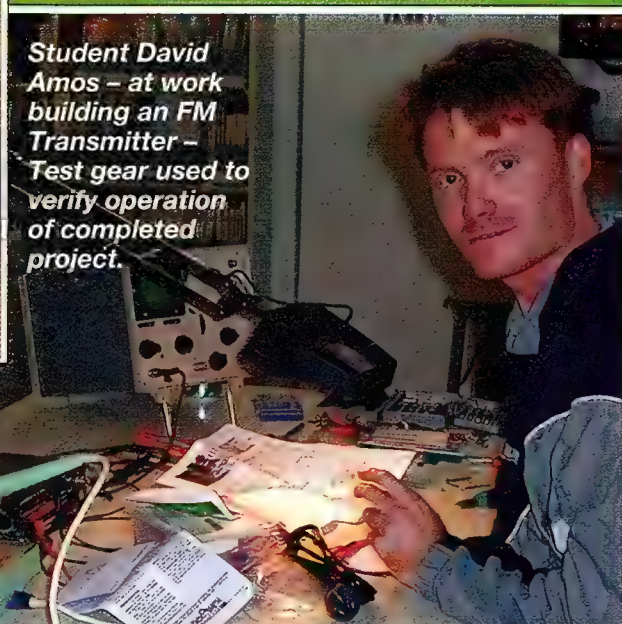


Student Robin (aka "The Boffin")  
Roots and Mariner Bruce  
Whehan



What is this  
damned thing?  
Anyone got a  
microscope?

Kieran McKenzie  
building his 'FM  
Spy Transmitter'



Student David  
Amos - at work  
building an FM  
Transmitter -  
Test gear used to  
verify operation  
of completed  
project.



James Duffin  
being  
assisted by  
Keith  
Potterill  
VK4KU





# MILITARY SOUNDS

By John Batty, VK4MBK  
E-mail [utes@radiomag.com](mailto:utes@radiomag.com)  
PO Box 703, Nanango, QLD 4615



...From Page 67

GOLF ZERO, if you follow the guidelines... request format, as in the safety, it is not required it either says urgent priority or routine, it is priority over... Barely readable, say again over... GOLF ZERO CHARLIE, this is GOLF ZERO, reference your last... TOWNSHEND ISLAND this is GOLF ZERO over... TOWNSHEND ISLAND, were you the C/S GOLF TWO ZERO now using GOLF ZERO, yes?... Roger, GOLF ZERO, originally when this unit arrived we were GOLF TWO ZERO I would have... the DIRECTOR OF PRACTICE would have picked up TWO ZERO... is customary but GOLF ZERO CHARLIE is I believe wait... I now understand you have a CASEVAC priority over... TOWNSHEND ISLAND this is GOLF ZERO, yes, over... TOWNSHEND ISLAND, what is the priority of your CASEVAC over... GOLF ZERO priority... as per... over... TOWNSHEND ISLAND roger out... GOLF ZERO CHARLIE this is GOLF ZERO... GOLF ZERO, this is TOWNSHEND ISLAND DDPAC speaking, insure this CASEVAC is also sent on range safety CSO net over... GOLF ZERO roger... send on this frequency over... TOWNSHEND ISLAND DDPAC roger, insure on range safety CSO frequency over... GOLF ZERO have you got the frequency for the Range safety officer... GOLF ZERO, DDPAC roger, out to you... TOWNSHEND ISLAND this DDPAC, send to GOLF ZERO the Range safety frequency over... This is TOWNSHEND ISLAND, I have that all written down here, do you want me to pass it on CSO net over... Send the frequency to GOLF ZERO... Roger, out to you, GOLF ZERO frequency prepare to copy... figures five five decimal one zero acknowledge over... GOLF ZERO acknowledged, five five decimal one zero who is the NCS over... TOWNSHEND ISLAND, CSO over."

**2328z** with "Over... GOLF ONE this is GOLF ZERO, that message has been passed to STARLIGHT's location, she is staying here until all the... has been finished, she will be expected through GOLF ZERO CHARLIE on other means over... OK then... GOLF ZERO this is DDPAC from GOLF ZERO CHARLIE, ALPHA MIKE ECHO from SEA TURTLE HARD will be delivered to HMAS MANOORA over... Unknown C/S this is GOLF ZERO, you're weak barely readable, wait out... This is DDPAC, did you receive my last over... This is TOWNSHEND ISLAND, no over... TOWNSHEND ISLAND this is DDPAC, relay to GOLF ZERO... Acknowledged out to you... GOLF ZERO this is TOWNSHEND ISLAND over... TOWNSHEND ISLAND from DDPAC, AME will be delivered from SEA TURTLE HARD to HMAS MANOORA acknowledge over... GOLF ZERO this is TOWNSHEND ISLAND, one zero mikes on our last over... Wait out... TOWNSHEND ISLAND from C/S CSO, they want to know what was the mechanism of this injury over... GOLF

ZERO he has suspected head injuries and neck injuries when his C/S was parachuted in to location at the start of the exercise he has... time... TOWNSHEND ISLAND acknowledged out."

**2342z** with "Location for the... activity for... I spoke to DDPAC before, he knows what I mean, I just want to make sure he has passed that message on over... TOWNSHEND ISLAND, yes to my knowledge that message was passed on that... requirements over... GOLF ONE NINE, this TOWNSHEND ISLAND, I cannot raise GOLF ZERO CHARLIE, is it your intention you want your trace AS two six to your C/S closed over... GOLF ONE NINE roger... acknowledge the AS correction... is closed for GOLF ELEVEN over... TOWNSHEND ISLAND roger out."

**0052z** with "Get us to Sabina Point and the... BEACHMASTER should know that they don't... which one has been prioritised to get us to Sabina Point, if it is at all possible we're to edge our way on that over... DDPAC roger... This is TOWNSHEND ISLAND... with DPRAC... all the admin requirements that he has for us once he gets back to Sam Hill... ie reports and God knows what, and then on the 29th there's a bus booked for us to take us into Rocky over... DDPAC."

**0100z** with "DPRAC don't know what SSR is, and they don't know what code that we've been given for our tasking, all they know is that the MANOORA has been tasked to get us to Sabina Point... they don't know which one and they don't know which tasking abbreviation we're down under, over... I find that hard to believe over... TOWNSHEND surprised as well... Here is the plan: I request you present it to DPRAC. It involves all of our C/S moving off at the two three three zero window more to follow... TOWNSHEND ISLAND send over... What it also requires is that the ABT... current for... at Sabina Point for our... once we leave... over... This is TOWNSHEND ISLAND what's ABT over... DDPAC is the Amphibious Beach Team, the people who come over... This is TOWNSHEND ISLAND, roger, it doesn't really matter when we get back because we're going to be staying in Sam Hill by the looks of it unless... I'll see what they say over... DDPAC... basically before you leave completely because they've got to start firing twelve hrs, it means that it's all controlled, that C/S goes complete, there's no problem and we... between twenty three zero we get to... driving under headlights at night more to follow over... TOWNSHEND ISLAND send over... Roger, can BEACHMASTER confirm there's one coming in at twenty three thirty, because DPRAC might have it all after that... again over... DDPAC I've spoken to the driver of one of your... his... can do that... the BEACHMASTER is at Sabina Point... I cannot... This is TOWNSHEND ISLAND, roger

I'll see what I can do again wait out... This is TOWNSHEND ISLAND, I've just talked to them and they're going to give a task through MANOORA to get us on the twenty three thirty, so as it stands our window is at twenty three thirty tonight over... DDPAC roger, vehicle will be returned to your location now out." (IJ)

## 33,350kHz:

**2322z** Aust Army Safety Net, SWBTA, QLD, Rockhampton Sector West with "TOWNSHEND ISLAND roger, CASEVAC report Serial One, grid three nine nine four zero nine see General xxxxx... Serial Two more to follow over... Send over... TOWNSHEND ISLAND Serial Two C/S GOLF OSCAR frequency, figures three one decimal one zero... Serial Three, five two?... Serial Four, nil... Serial Five, ambulatory, I say again Serial Five, ambulatory, more to follow over... TOWNSHEND, Serial Six, suspected head and neck injuries... Serial Seven(?)... Serial Eight, more to follow over... Serial Eight, Australian Regular Army, 4 Field Regiment... Serial Nine, more to follow over... Send over... Serial Nine, TOWNSHEND ISLAND, also needs to be evacuated to CAMP GROWL for CT scan and monitoring... End... CASEVAC report acknowledge over... This is DPRAC, roger out to you... CMRCG, CMRCG this is DPRAC over... DPRAC this is CMRCG... Did you acknowledge my call with TOWNSHEND ISLAND over... CMRCG, yes, we copied all of that TOWNSHEND ISLAND, what was the mechanism of injury? Over... This is TOWNSHEND ISLAND, I'll find out now from C/S GOLF OSCAR, GOLF ZERO sorry and I'll get back to you over... CMRCG."

**2335z** with "Regards to the injury, the result of injury is parachuting in at beginning of the exercise, continued headache and worsening of the condition over... Confirm results of parachuting into exercise over... Correct over... TOWNSHEND ISLAND out... AME this is DPRAC... until you lift off over... This is AME, we're waiting approval over... AME wait out... DPRAC, you have clearance to proceed from your location direct to... more to follow over... AME send over... DPRAC, you're to remain west of ACA MACKA over... AME say again your last over... DPRAC, you're to remain west of ACA MACKA over... This is DPRAC, did you receive my last over... AME yes over."

**2338z** with "CMRCG, say again your last... TOWNSHEND ISLAND, I say again the injury is under control but still requires evacuation over... CMRCG roger that, the AME is proceeding and the helicopter is in process of departing now, over... TOWNSHEND ISLAND roger out." (IJ)

Thanks to our correspondents (already identified) and our logs contributors this month:

AN A. Nonymouse

IJ Ian Julian ZL1TBM Pukekohe NZ

SD Simon Denneen, Sydney NSW

WA4 Sheldon Daitch, WA4MZZ, San Fernando City, La Union, Philippines **R**



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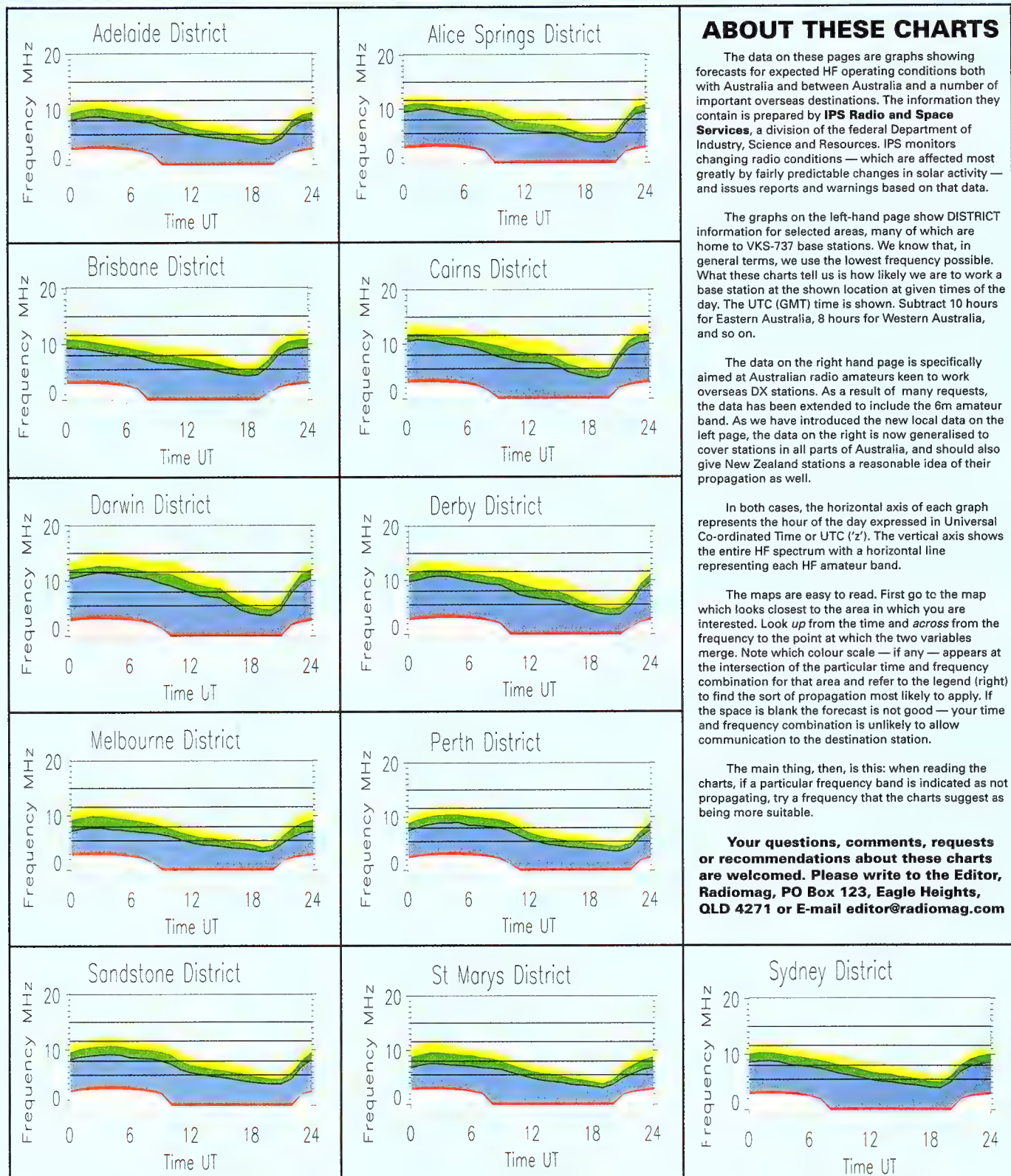
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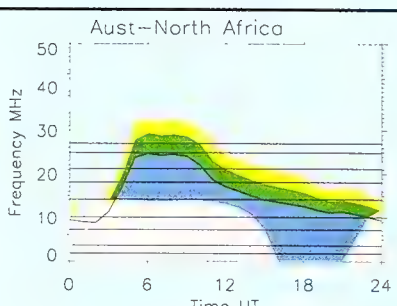
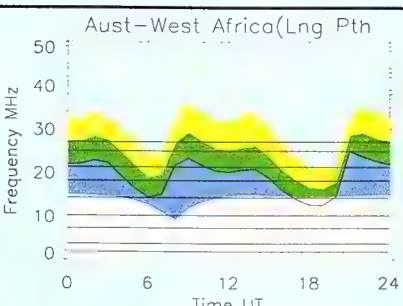
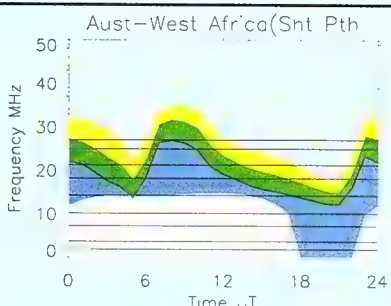
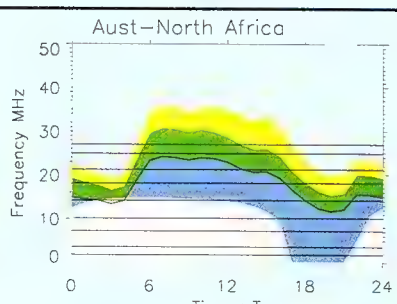
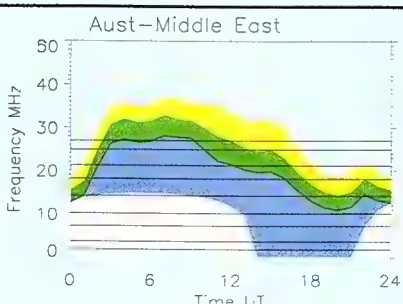
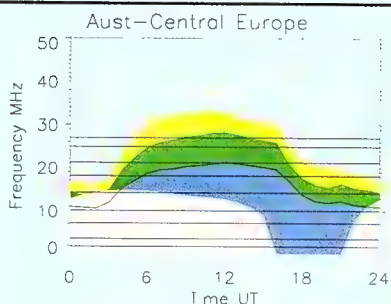
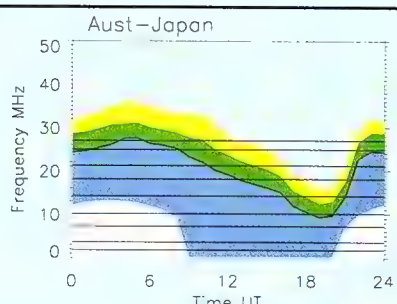
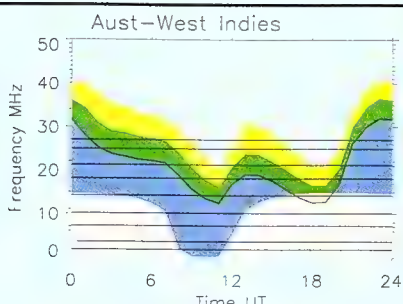
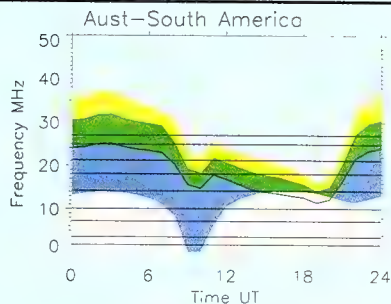
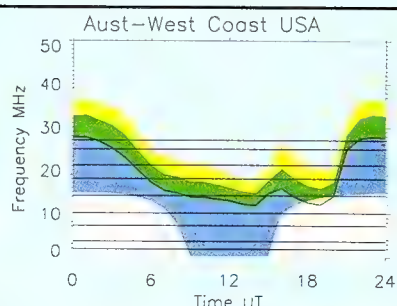
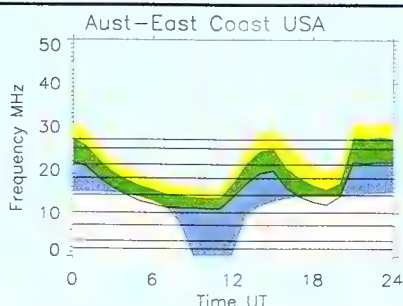
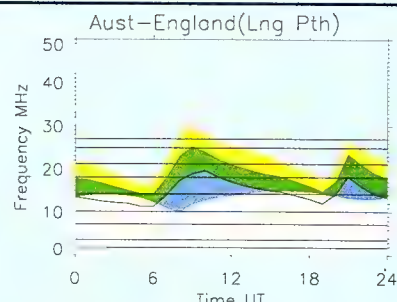
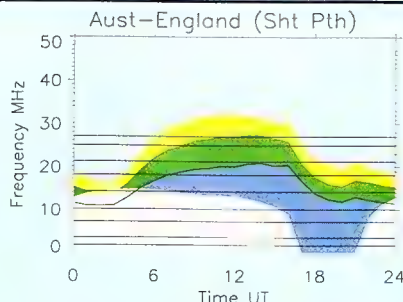
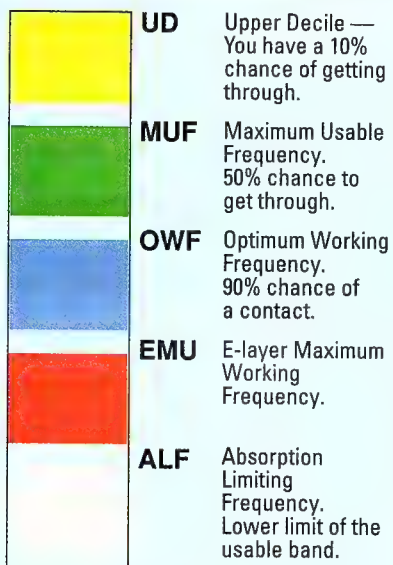




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• **Alinco** DR-610E VHF/UHF with manuals in box \$500. **Kenwood** TS-440S auto tune manuals in box \$790. **Icom** 2GA 2m h/h \$275. Andrew, VK5WT (08) 8293 8126

• **Alinco** Dual band H/T DJ-G5, 2 batts, drop in charger, 5/8 aerial \$450. **Kenwood** TS-450SAT inbuilt auto ATU, CW filter \$1350. **Kenwood** TM-733 dual bander perf cond \$520. VK4DRY (07) 5520 1695 or oncewas@iprimus.com.au

• **Alinco** DX-70TH HF xcvr like new \$995 or best offer, also **Duoro** DSA-300 20amp power supply \$150 or offer. Gopal, VK2WGY (02) 9460 9840

• **Alinco** DX-90 \$990. **Yaesu** FT-102 \$500. **Yaesu** 8800 \$350. **Tiny2** \$100, **Pakratt** PK-232mx \$150. All have manuals, mic, etc GWO. David, VK2BDT (02) 4821 5036

• **Antenna** HB-35 5el, 20, 15, 10m, power rating 3kW, in VGC \$350. Jim, VK3NR (03) 9367 6920

• **Apollo** mobile CB radio AM SSB 40 chnls with 4 el \$250. Andrew (07) 4778 3373

• **ATV**: 13cm ATV xmtr and RX with two 30-el Yagis, never used. Covers the ham band and can be used for video linking, has video and audio in and outputs. \$450 ono. Craig VK4SSB (07) 4153 3548 or realfm88@hotmail.com

• **Base** CB Ant. Alpha 700 9ft 1/4 wave G/plane, new design complete, sell \$49. Joe (03) 9471 4362 or 0411 055 012

• **Deceased estate** Telex Hy-Gain Tail Twister rotator, model T2X, 220V, brand new, never used, \$700. Paul VK6NX (08) 9305 9470

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• **Deceased Estate**. Icom IC-730 HF xcvr, very good cond, in orig carton with all manuals & schematic diags etc \$500. Will pay freight, or \$450 you pay freight. Price firm. Rob (07) 4163 3904 or thelob@hotmail.com

• **Furzehill** S-510 spectrum analyser \$100. **Cossor**-1058 Oscilloscope \$85. **University** UC-3 Oscilloscope \$75. All need some attention. Adam, VK3JRR (03) 5464 2214

• **Hy-Gain** triband quad TX2 rotator comm. Crankup tiltover two section triang. Mast all cables & coax. **Realistic** HF rcvr bandspread EC. (07) 4933 2646 or mervd@rocknet.com.au

• **Icom** IC-402 UHF h/h with extra receive freq HH-46 spkr new \$350. Current model Terry, (02) 9501 12403

• **Intech** 10m tx \$200. **Dragon** SS-485+ 10m tx \$280. **Connex** TX-200 amp new \$200, original box, manuals etc. **Oskerblick** SWR 200 \$90. Vaso, VK6VAS (08) 9964 2385

• **Kenwood** TL-922 HF linear amp VGC \$1400. **Yaesu** FT-101ZD VGC \$450. **Yaesu** FT-411E H/T \$150. **Marconi** stepped attenuator \$25. **Tiny2** TNC \$50. Geoff, VK3DNJ 0412 760 191

• **Kenwood** TL-922 linear amp VGC \$1400. **Yaesu** FT-101ZD VGC \$450. **Marconi** TF-213635 stepped attenuator 0-142db GC \$25. **Yaesu** FT-411E h/t \$150. Quantity of Andrew LDF connectors POA. Gregg, VK3DNT (0412) 760 191

• **Kenwood** TS-430S \$600. Recently serviced by Kenwood Sydney, upgrade sale. Complete 0-30MHz coverage. Mick 0428 27 8780

• **Kenwood** TS-50 HF mob xcvr EC, 6mths old \$1350. **Icom** IC-Q7A 2m/70cm EC. SMA Adaptor lead \$315. Frank, VK3ZO 0418 888 038 or vk3spline@bigpond.com.au

• **Kenwood** TS-50 HF mobile. EC 6mth old \$1350. **Icom** IC-Q7A 2m/70cm EC. SMA/BNC Adaptor lead \$315. Frank VK3ZO 0418 888 038 or vk3spline@bigpond.com.au

• **Kenwood** TS-520S HF xcvr with one set of new spare finals & books \$420. Alf, (07) 5599 7139

• **Kenwood** TS-570S all mode HF and 6M, in box, complete, like new, the radio is 100% including in-built tuner, \$1600 incl post. Steven, VK5TSP 0411 06 8341 or squirralien@dingoblue.net.au

• **Kenwood** TS-680S HF & 6M good cond \$600 ono. Les VK5BM, 0413 838 063 or (08) 8552 5959 or leswil@granite.net.au

• **Kenwood** TS-711A 2m all-mode xcvr, VGC with operating manual, hand mike and service manual \$650. Damien, VK3RX (03) 5427 3121 or vk3rx@arri.net

• **Kenwood** TS-850S. Mint cond, built in ATU & P/S. With box and manual, all band HF, 100W \$1700. **Uniden** President HR2510 30W PEP excellent 10/11m mobile. Mobile bracket incl \$450.

**Kenwood** TW4100A dual-band 144/430 MHz mobile txcvr. Mint Cond, with mob mount & many features \$390. **Icom** IC-27A 144 MHz mobile xcvr. Comes with mobile bracket, box, manual \$290. **MFJ**-1278T Multi-mode TNC. Box, manuals, mint cond. \$390. David VK3NDS (03) 97396213 or 0419 357 104 or dsimp@tbsa.com.au

• **LL Grace** DSP-12 Multimode TNC with all options & manual \$500. **Paldon** 23cm 16W TX switched Power Amplifier \$250. 8A **Power Supply** home-brew \$50. Glen, VK2UKW (02) 9907 0407

• **Magellan** 2000XL waterproof hand-held GPS receiver. 12-channel parallel receivers, EC with case, manual, box. Many features, but easy to use! \$300. **Magellan** mobile power cable/battery eliminator to suit. Has ext ant conn for other GPS units as well. In orig box \$50. **Magellan** mobile bracket for 2000/3000/4000 series, new in box \$50. \$350 the lot! Chris, VK3CE (07) 5545 0666 or editor@radiomag.com

• **MFJ**-1272B multimode TNC with TNC/mic switch \$400 ono. Mark, VK4IDX (07) 4055 6214

• **Philips** FM-900 tuned to 2m & programmed for 99 chnls \$125. **Microwave Modules** xvrtr MMT-144/28K GaAsfet front end. 15W output \$150. Roger VK3XRS (03) 5468 1191

• **Philips** PRM8030 remote head and cable. Good cond \$70ono. Also Philips FM93 UHF W1 Band 470-490MHz, 10ch, \$50ono. Phone Dominic (08) 8344 5516 or simoco@gmx.net

• **Ranger** 2950 10m all modes, 25w. As new, boxed, manuals, \$370. Tait 500, UHF CB only with matching base PSU \$250. Good cond. Matt VK3TXB 0438 867 081 or mattles@alphalink.com.au

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• **Realistic** HTX-100 10m SSB/CW xcvr in very good cond, with manual, mob mtg brkt & screws, mic brkt and pwr cable. Orig puch in USA. Good value at \$200. Doug, VK2KIQ (02) 9550 6264 B/H or doug@tiaretechnics.com

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• **Shack Clearout.** Yaesu FT-101ZD xcvr, Emtron EAT-300A tuner, Yaesu FL-2100B amp, Yaesu MD-1 desk mike, Kenwood TS-180S, MFJ deluxe versa tuner 11, Icom IC-211 2m, Tokyo HL-V10V amp neg. All in PC. Brian, VK2GYT (02) 6972 3634

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• **Tektronix.** Old tube type Tek oscilloscopes and ancillary equipment wanted. Call me and get some of the weight off your shack foundations. John VK2ZJF (02) 9351 6007 or j.foster@microbio.usyd.edu.au

## QSL Collection

QSL donations from silent key estates & generous amateur operators to the Federal WIA QSL National Collection very welcome. Please contact the Honorary Curator of the collection, Ken, VK3TL (03) 9728 5350

• **Telequipment** D-83 large screen Oscilloscope, 50MHz. Dual chnl with probes, adjust trolley, manual. Mint \$400. **Marconi** TF-2650 FET analog VOM. GWO with manual, leather case plus another for spares/restore. \$75. Ed. (03) 9850 2134

• **Ten-Tec** 1208 6m xvrtr. Brand new, spotless, with manual. \$300. Mirel VK2BOD (02) 4333 1823 or vk2bod@tpg.com.au

• **TET Emtron** ant sys HB-35C 5el 3band 3kW power rating in VGC \$350. Jim, VK3NR (03) 9367 7920

• **Timewave** DSP-9+ DSP audio noise filter, brand new in box with manual etc. Join the digital age! Ideal for all older HF rigs; connects to audio output and gets rid of nasty noises! \$400 incl freight within VK. Chris, VK3CE (07) 5545 0666 or editor@radiomag.com

• **Transmit** tubes 4CX1000 \$100. Sockets to suit \$35. Vacuum capacitors \$60. Ned, (03) 9725 6192

• **Uniden** 120XLT scanner, current model \$190, cost \$295. Terry (02) 9501 2403

• **Uniden** PRO-640E mod with UPD-2924 xcvr 26.200-28.195 with 2 mics STD & power. Also has temp circ fitted rx/tx clarifier. Broadband & ALC mods for HP also has speech proc with crystal filters \$350 ono. Zetagi B-300P linear 220-PEP on SSB has direct keying mods & protective diode circuit fitted \$300 ono. KLB-100dx linear \$100 ono. 40amp cont with digital volt & amp readouts \$350 ono. Walter, 0412 804 598

• **Wanted** Yaesu FT-102 for spare parts, not working is ok. Also require rf board for FT102. Paul, VK2DZJ (02) 4261 8830

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• **Wanted:** FL2100Z amplifier in good working order. Chris, VK3FY 0419 155 139 or vk3fy@hotmail.com

• **Wanted:** FT102, FV102 & FL2100Z, must be in good wkg order. Chris, VK3FY 0419 155 139 or vk3fy@hotmail.com

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• **Wanted:** Icom IC-775 DSP in GC. (07) 3284 6639

• **Wanted:** Kenwood model HS-5 headphones. VK5ASN (08) 8725 2526

• **Wanted:** Kenwood TH79A dual-band hand-held Perth metro area only must be complete with manual and VGC. Nico VK6BOS (08) 9201 1350 or 0414 538 478 or a.signorile@bigpond.com

• **Wanted:** Manual and/or circuit diagram for a UNIDEN 2020 HF xcvr. Ian, VK3JQ, (03) 5428 7364 or vk3jq@arri.net

• **Wanted:** MFJ-259B or MFJ-269 HF/VHF/UHF SWR analyser in GC with inst. Also Revex W-750 HF/VHF/UHF SWR power meter. Reg, VK4JRM (07) 5593 8221

• **Wanted:** old Katsumi auto morse keyer with built in oscillator in good condx and reas price pls. Ken VK4JR (07) 3293 0083 or vk4jr@amsat.org

• **Wanted:** PLL Board for TS-120v or a wrecking 120v. Steve (08) 9497 7710 sandman3@dingoblu.net.au

• **Wanted:** Icom IC-R8500 or IC-R9000, AOR-8500, or Drake R8B receiver. Will pay up to \$2K for the R8500 or \$4.5K for the R9000. Todd (02) 9801 7545 or todddemsle@yahoo.com.au

• **Wanted:** Swap Morse Key Y12/2 as used by Australian Overland Telegraph, for Kent single paddle electronic key. Atholl, VK7ZW (03) 6426 2609

• **Wanted:** Watkins Johnson or Collins or General Dynamics HF radios. Leroy (08) 8377 2915 or nextgen@nextcentury.com.au

• **Wanted:** Yaesu FT-8100R. And remote kit if you have one. Andrew, VK2TWO (02) 9027 0270 or 0411 101 021 or ascott@bigpond.net.au

• **Yaesu** 2m FM mobile xcvr model FT-2200 with manual & access as new cond \$300. Gary, VK3XGL (03) 9741 9942

• **Yaesu** FL-2100Z Amp 160m - 10m with manual/cct diagrams \$800, new tubes (Svetlana) 18 months ago. Ken VK4JR (07) 3293 0083 or vk4jr@amsat.org

• **Yaesu** FRG-100 comms rcvr, near new with pwr supp & manual \$400. Ron (02) 9365 1793

• **Yaesu** FT-1000D top-shelf HF base xcvr. Has all available filters plus BPF-1 to allow simultaneous monitoring of two bands at once. 200W out, fast auto ATU, full workshop manual, DVS-1 digital voice recorder — the lot! Last model with all current software updates. Perf cond, ready for the DX. \$3500 incl freight within VK. Chris, VK3CE (07) 5545 0666 or editor@radiomag.com

• **Yaesu** FT-1000MP plus desk mike in PC, little used. \$3600. Mick, VK4KCF (07) 3284 7739

• **Yaesu** FT-212RH VHF FM radio manual ECT \$200, VGC. Peter, (03) 6437 1545

• **Yaesu** FT-747GX HF xcvr as new in original box with manual. FM board installed \$800 ono. Gilly (03) 9489 2657

• **Yaesu** FT-767GX all mode HF-VHF-UHF xcvr in good cond with matching desk mic and handbook. \$1200 Peter, VK2EVB (02) 6652 7160 or vk2evb@bigpond.com

• **Yaesu** FT-890 HF xcvr, last of Yaesu's best all HF bands transmitter & .5-30MHz receive with a true S-meter, built-in keyer, DDS VFO & mems 100W output. Used for receive only. EC \$900 ono. Chris, VK2YMW (02) 9487 2764

• **Yupiteru** MVT-7100 hand-held scanner. Covers 100kHz-1650MHz no gaps. Comes with power supply and book. Good cond. Paid \$400, sell \$300ono. Martin 0410 789 708 or ezy351@yahoo.com.au

• **Barrett** 550 commercial HF xcvr with Selcall, Telcall, auto-tune antenna. Little used. Suit new buyer, perf cond. With whip, full install cable/hardware pack, manual. Many channels programmed, can add more! Cost \$2990, sell \$1990. Ron (07) 5573 2795

**All phone numbers are after hours unless otherwise noted**



# LAST word....

## Pestwhack

People say that the old ways of amateur radio are being replaced by the Internet and modern technology, but I'm not so sure. If these people mean modern technology as it's practised by the dynamic new Customer Service Managers in my bank, for example, then I think we need to question the wisdom of putting all this technology into the hands of people with the brains of hamsters.

In the circumstances I'd better not name the bank, so let's call it *Pestwhack*. If governments really enacted the will of the people, the bank would be forced to use this name at all times. Of course, we'd have to draw the line at putting all their dynamic young Customer Service Managers in stocks and tipping garbage on their heads because, as we know, civilisation has evolved beyond these primitive attitudes. Bummer.

I can't imagine how these Customer Service Managers get to work in the morning. I have a vision of them showing up with a toothbrush stuck in one ear, their pants on backwards and a sign around their neck saying "This Way Up". Then they sit down at their keyboards and start fiddling hopelessly with the mouse, trying to make it squeak.

Obviously, one of them found out how to use a keyboard in the last few days, because they send the paperwork for my Internet Banking account to someone else. No-one knows who. For all we know, it could have gone to the new space station, or perhaps to some part of the world where the mail is delivered by goats. I keep expecting to see a huge entry in my next bank statement for Baluchistani-language pornographic videos shipped to a PO Box high in the Khyber Pass.

Fortunately technology comes to the rescue once again, because you can call Pestwhack on their dynamic new Customer Service Hotline. In fact, this is the *only* number you can call. They insist there is no longer such a thing as a phone number in a bank branch, so those remarkably phone-like structures you see in your bank are obviously something else. My theory is, they are experimental devices for making computer mice squeak.

The Pestwhack Customer Service Hotline provides an invaluable service, giving you the opportunity to listen to gifted musicians like Barry Manilow and Baby Spice until you feel your understanding of the Customer Service problem has improved.

It can actually be worth persisting with the bank's doglike musical palate until you get through just once, for the experience. A Customer Service Operative will then explain how the whole problem is your fault. All the ingenuity which would otherwise be directed to the correct orientation of toothbrush and pants is funnelled toward this explanation.

I therefore understand that the bank's losing my original application, sending the paperwork to places unknown, bugging up my phone banking so that I was stuck without money in Bungendore

NSW, failing to return calls and misunderstanding simple problems with a kind of strategic thick-wittedness that would do credit to Mahatma Gandhi's vision of passive resistance are, in fact, all my fault. What can I say? I'd promise not to do it again, but no doubt my incompetence as a customer will soon force Pestwhack to send all my money to a refuge for senile orang-utans. What can you do?

Now, some banking people may think this column is just another example of mindless bank-bashing, and of course you will want to complain. Luckily I have a Customer Service Hotline number. Just dial 1300 WHY TRY. What I intend to do is sing you the first two verses of "Hey Jude". Then I will accidentally hang up on you.

So I think we've forgotten the role Amateur licensing used to play as a primitive kind of IQ test. It was self-regulating. The more hard-thinking operators tended to wind up as a small pile of ash at the bottom of a high-powered antenna. This was a primitive form of natural selection, and it is a shame that lawyers and other pantywaists will not let us incorporate this into bank recruitment procedures today.

I'd like to see people at my bank with some understanding of the technology they use. Starting with "it's not just numbers, it's actual money" would be good. And it might stop the I.T. Department tearing their hair out when those dynamic young Customer Service Managers keep stuffing little bits of cheese into the mouse.

Of course, there would have to be other technological changes, too. I'd start by replacing that sanctimonious introductory message on the Customer Service Hotline with a real one. "Yo. This is Pestwhack. In

fact it's probably not Pestwhack, chances are it's a call centre. And if you think anyone here on \$8 an hour cares less about your pathetic little problem, call Earth, pal. We loathe and despise you." And so on.

When I reflect on the overall technological and Customer Service picture at Pestwhack, I can't help recalling the last words of my great grandfather, which were "Ugh".

It is possible my great grandfather is a Customer Service Manager at Pestwhack. All it would require is a coming to terms with self in the catatonic and cataleptic states.

Is there *no-one* who will sponsor a licensing scheme for banking technologists? I think the Amateur service provides an excellent model, in that they could be tested on theory and regulations. We could start with the theory that the customer is sometimes surprisingly intelligent for a non-Customer Service Manager, and perhaps a

regulation that customers bill back their time for fixing screwups at a rate of, say, \$300 an hour. Hello, Customer Service Hotline.

Should this initiative fail, it naturally leads us to the question, "How many Pestwhack Customer Service Operatives does it take to change a light globe?" And I'd be interested to know what you think the answer should be.

My suggested answer is, "all of them". Specifically, what I propose is that we stick the light globe in someone's mouth. Then we get the rest to hold hands, plug them into the mains and zap the bloody lot.







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